

THE  
QUARTERLY JOURNAL  
OF  
ECONOMICS

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MAY, 1906

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THE INFLUENCE OF THE CROPS UPON BUSINESS IN AMERICA.

FLUCTUATIONS in business prosperity result from a wide assortment of causes. They are variously attributed to epidemic states of mind, to changes in legislation, to the development of new industrial processes, to the opening of new trade routes, to excesses in banking, or, again, to changes in the methods of industrial organization. With all of these factors, men may, by taking thought, foresee in some degree their movement, and in some measure may control their outcome. Business welfare in every community depends, however, very largely upon another set of factors, whose caprices none can predict and none can govern,—factors which are closely connected with conditions of weather and of temperature. As there is no country where agriculture is not pursued or where agricultural products are not used either as foodstuffs or as raw materials, there is no country where the chance conditions

of weather are not of vital consequence. Nor is the influence of the harvests confined solely to agricultural areas and occupations. It reaches far beyond the fields. It affects manufacturing and transportation interests, banking and foreign trade, and is responsible for many of the larger deviations in commercial prosperity.

The product of agriculture differs from the output of all other branches of production in being so largely independent of human regulation and so little adjustable in amount to demand. This results not merely from the dependence of the harvests upon meteorologic conditions, over which man obviously has neither control nor prophetic vision, but also from the fact that the agricultural output is in most cases produced by a far greater number of disconnected individuals. The several crops are grown upon a countless number of widely scattered farms, the owners of which in each case are of necessity ignorant for the most part of the intentions and operations of other producers. Even were there no uncertainties of weather to contend against, there would still be serious and unforeseeable maladjustments of supply because of the inability of individual producers to gauge the total output,—an inability which is obviously more marked in the case of agriculture than in either mining or manufacture.

In the following paper we shall study the influence of this peculiarly fortuitous factor upon general business, and attempt to measure the extent of its responsibility for the advances and reverses of trade in America during the past thirty or forty years.

#### I.

One can easily discern four or five important ways in which general business conditions are likely to be affected by the success or failure of the crops.

(1) In the first place the size of the crops exerts a considerable influence over the community's power to purchase other goods. If the season has been successful, the farmer is almost sure to increase his expenditures, and use at least a part of his new earnings. He may build an addition to his house or erect a new barn, or he may purchase a piano or a new buggy or new house furnishings or new clothes for himself and his family. Even if he does not use all of the additions to his income himself, but deposits some of them in the banks, they will none the less help to swell the market for other goods in the hands of other customers of the bank. If, further, on account of a plentiful harvest, the prices of food and of certain sorts of clothing are reduced, another result to be expected is that people in general outside of agricultural pursuits will have more to spend upon other things. A bountiful harvest is thus significant for almost all of the occupations in a community. It involves an immediate expansion of the demand for the most varied sorts of merchandise, and the economic machine in most of its branches is apt to be stimulated to some extent through increased consumption. On the other hand, when the agricultural output fails, the farming population is at once obliged to retrench, to forego contemplated improvements in their farms, to curtail many of the usual or expected expenditures, perhaps even to withdraw deposits from banks, and so abridge the working capital of others. If, too, the prices of breadstuffs and meats rise, many of the rest of the community will have to devote a part of what they are accustomed to spend upon other things to the purchase of food. They will have to abstain from some of their usual purchases in order to buy these necessities of life. At such times, then, not only will the industries which produce primarily for the farmers feel the pinch of reduced consumption, but other industries as well, which produce objects that in ordinary

times are consumed by the masses of men. The clothing trades, for example, may be expected to feel the difference, and the liquor, tobacco, and other similar occupations are also likely to be affected.

(2) In the second place the very solvency of a large part of the agricultural population, and of those connected by business relations with them, depends to a considerable degree upon the outcome of the year's harvest. Whether or not the farmer will be able to repay loans which he has contracted, whether or not he will be able to settle his bills with tradesmen and dealers, and whether or not he can pay for his agricultural machinery and farm improvements, will in many cases be decided by the size of the crop. If the crop fails, his various creditors, the banker who has lent him money, the mortgagee of his farm, the shopkeepers from whom he has bought his supplies, and any others to whom he is indebted will either have to wait, or, if they force a settlement, will not improbably suffer losses. If these delinquencies occur upon too wide a scale, the failure in agriculture may be propagated into other fields, and bankruptcies among bankers, dealers, and manufacturers may ensue. If the harvest, on the other hand, is good, and can be marketed at profitable prices, the capital of the affiliated creditors will once more be set free and made ready for new activities.

(3) In the third place, in a country where agricultural products form an important factor in the foreign commerce, the size of the crops will exert a considerable influence upon the balance of trade and the international movement of gold. The extent of the bank reserves in the great financial centres and the contraction or expansion of general credit may in consequence depend most importantly upon the output of the season's harvests. This consideration is of peculiar concern in the United States, where until quite recently two-thirds or more of the total



exports have consisted of such produce.<sup>1</sup> When the American crops are abundant, our exports very naturally tend to increase, and gold imports are apt to occur. That in turn means large cash holdings in the banks, with, under normal conditions, the accompaniments of expanding credit and buoyant trade. When, on the other hand, the crops fail, the movement of exports and of gold swings in the contrary direction, and in that event we are apt to be confronted with dwindling bank reserves, a contingent contraction of the general credit, declining business, and less activity in trade.

(4) Again, the size of such crops as are not consumed in the locality of their production is of great significance for the transportation interests. One has only to observe the fluctuations in railway earnings month by month during the course of any normal year to realize how important a factor the harvests are in railway affairs. It is in the months of the harvests, from August to December, that railway traffic and railway earnings normally reach their highest levels, the earnings not unfrequently being thirty to 40 per cent. higher in September or October than in May or June. A bumper crop in the case of a commodity like wheat, which is so largely consumed at a long distance from the place of its production, is consequently a source of great profit to the railroads concerned, while a poor crop means diminished traffic and reduced earnings.

(5) Finally, the success or failure of certain crops is also of significance for those industries into which the crop

<i>Exports of agricultural products, per cent. of total exports.</i>		<i>Exports of agricultural products, per cent. of total exports.</i>	
<sup>1</sup> Year.	Per cent.	Year.	Per cent.
1890 . . . . .	74.51	1898 . . . . .	70.54
1891 . . . . .	73.69	1899 . . . . .	65.19
1892 . . . . .	78.60	1900 . . . . .	60.98
1893 . . . . .	74.05	1901 . . . . .	64.62
1894 . . . . .	72.28	1902 . . . . .	62.23
1895 . . . . .	69.73	1903 . . . . .	62.73
1896 . . . . .	66.02	1904 . . . . .	59.48
1897 . . . . .	66.23	1905 . . . . .	55.03

enters as a raw material. A failure of the wheat crop will obviously depress the milling industry, and a failure of the cotton crop will curtail the earnings of the cotton factories, not only those in the vicinity of the cotton-growing States, but those in New or old England as well. A failure of the corn crop similarly will diminish the profits of cattle raising, may work injury to the packing interests, and to some extent may affect also the distillers of whiskey.

There are, then, five important ways in which the conditions of agriculture are likely to influence general business: (1) by affecting the community's consumption of other goods; (2) by affecting the solvency and credit of farmers and those engaged in dealings with them; (3) by affecting the balance of trade and the bank reserves; (4) by affecting transportation interests; (5) by affecting manufacturing interests for which the agricultural product is a raw material.

Obviously, the greater the proportion of the population of a country that is engaged in agriculture, the more severely the country will be affected by a sudden fluctuation in the crops; and, as so large a proportion of the American people are occupied with agricultural pursuits, we should naturally expect the condition of the crops to be of greater influence upon trade conditions in this than in many other countries. Those who live in the large cities or are familiar only with such infertile regions as the Atlantic seaboard are apt to forget that we are still very largely an agricultural people. According to the census of 1900, out of a total of twenty-nine million persons reckoned as gainfully occupied, more than ten millions were engaged in agricultural pursuits. That is to say, more than one-third of those engaged in gainful occupations were connected with farming of one or another sort. We should naturally expect, then, the output of agriculture to be of peculiarly intimate and conspicuous influence upon general business conditions in the United States.

## II.

At the same time there are, needless to say, other factors than the output of our farms which may affect our prosperity, and whose influence may quite outweigh the influence of our harvests.

(1) First, it will be noted that in the case of those agricultural products which belong in large degree to foreign trade the financial success or failure of the harvest in any given locality depends to some extent upon the output of the same product elsewhere. An unusually large harvest in this country, if accompanied by small harvests abroad, obviously means prosperity for the American farmers, means large exports and high prices, tends to mean incoming gold and expanding credit. But, if accompanied by excessive crops abroad and flagging demand, it means, on the other hand, extraordinarily low prices, diminished exports, and depression in agriculture, if not in general trade. We have examples of each of these situations in the period centering about 1880. In 1879 the wheat crop, the corn crop, and the cotton crop were all the greatest ever known in our history up to that time. But in England and Europe the wheat crop was a failure on account of excessive rain and cold, and in India the cotton crop was a partial failure. We had then the conditions which would naturally result in prosperity for agriculture and flourishing trade. In 1880 these conditions were repeated. All three of these crops in America exceeded even the levels of 1879, and the foreign crops again ran short. There resulted, as every one knows, a business development rapid beyond all parallels in our previous commercial history. But note the situation only two years later. The American wheat and cotton crops in 1882 exceeded even the record-breaking totals of 1880, and the corn crop was the largest, with one exception, in our history. But in that year the

countries of Europe also produced the greatest total wheat output in their history. The price of wheat in America accordingly fell, and the amount exported was strikingly diminished. The market for cotton also proved to be overstocked, and the price of cotton likewise underwent a serious decline. There was no new development of business, no great revival of prosperity after the harvests of 1882. Although the crops of wheat and cotton were the most abundant that America had ever known, the following year was one of "steadily increasing depression." So also two years later, in 1884, the American wheat and corn crops once more bulked larger than ever. All previous records for their size were broken; but here again the records of the rest of the world for output were also broken, and the price of wheat in consequence declined to the lowest level it had yet touched during the century, and the value of the total crop in the end proved less than it had been in any year since 1878. The agricultural output in America in 1884, as in 1882, would have led one to expect a fresh outburst of general activity, but the movement in the latter case as in the former was checked by the concurrent abundance abroad, and the year that followed in each case remained one of marked depression.

(2) In the second place, even where the country is blessed with the desired conjunction of domestic crop abundance and foreign crop failures, the revival of business activity may be prevented by the operation of other influences.

In 1891 the wheat crop failed everywhere in Europe, and this occurred on the top of two serious harvest shortages in 1889 and 1890. At the same time the American crop proved larger than ever,—proved larger, in fact, by one hundred million bushels than the record crop before that date. The export of grain ran even beyond the enormous exports of 1879 and 1880, and reached in the ensuing year the highest level ever known before or since. The

cotton fields also turned out by far the largest crop on record up to that time, and our exports of cotton exceeded all precedents. The corn crop was also abundant, being, with one exception, the largest ever harvested. And yet, with all these favoring conditions, with bumper crops in all lines in this country and scant crops abroad, with record-breaking shipments of wheat and cotton, with the heaviest export trade ever known in the history of our country, and the most favorable balance of trade in a decade, there was no extraordinary outburst of activity in general trade, no such expansion of business as had occurred a dozen years before under similar circumstances. No matter what we select as a gauge of prosperity, we find the same evidence of a relatively slack development in the early nineties, as compared with either the upward movement of the early eighties or that of a decade later. We may take the statistics of the per capita foreign trade, or the railway earnings per mile, or the bank clearings, or the stock exchange transactions, or the prices of commodities and securities, and we find them all telling the same story. The maximal records of the period all fell far short of those of the preceding or those of the succeeding cycle of trade. The continued agitation of the silver question and the dwindling reserves of the Treasury, presenting as they did an ominous outlook for our monetary standard, sufficed to prevent any considerable improvement in domestic trade and manufactures, such as otherwise would have resulted from the bountiful harvests and the immense export trade. American securities held abroad began to be returned in such quantities as to counteract what would naturally have been an enormously favorable balance of indebtedness; and American investors themselves hesitated from risking capital so long as Congress could not be depended upon to maintain the value of the country's money. There was no season of buoyant activity in 1891

and 1892. Trade continued sluggish. Congress had cast a deadening blight over business which even the plenteous bounty of nature was unable to overcome.

(3) A third fact is to be noted in discussing the relations of the crops to economic cycles in a country which, like the United States, ranges over a very extensive and diversified territory, and produces in different regions several very different crops. These various crops—belonging, as they do, to different latitudes and soils, subject to very unlike conditions of weather and temperature—are by no means bound to stand or fall together. An unusually small harvest in one line may be concurrent with unprecedented abundance in another. The failure of one crop may exert a depressing influence in one part of the country, and yet be more than compensated as regards the country as a whole by expanding production and flourishing activity in another.

The three most important American crops are, respectively, corn, cotton, and wheat. Corn, although it is grown in greater or less quantities throughout the country, wherever there is tillable land, and although there are few places where it is grown exclusively, is of preponderating importance in the "corn belt." This belt includes the northern parts of Ohio, Indiana, and Illinois, the whole of Iowa, and portions of Missouri, Kansas, and Nebraska. Cotton, our next most important crop, is much more rigidly restricted. It is produced exclusively in a compact strip of country, running along the Gulf States from eastern Texas, including the Carolinas on the east and parts of Arkansas and western Tennessee on the north. Wheat, like corn, is raised to some extent in all or most of the States (twenty-five raising winter wheat, nineteen spring wheat, and some both), but in this case also there is a distinct and comparatively limited area known as "the wheat region" in the north central river basin, and more

than half of the wheat raised in the country comes from the six contiguous States, Minnesota, North and South Dakota, Kansas, Nebraska, and Missouri, the first three growing spring wheat, the latter three winter wheat.<sup>1</sup>

Among these three crops may occur every conceivable combination of success and failure. The crops of the Southern States may be abundant when those of the Middle West are poor, which, for instance, was the case in 1894, when the cotton yield was enormous and the production of wheat and corn fell short of earlier levels. In 1895, on the other hand, the contrary situation occurred, and we had a very short cotton crop concurring with a record-breaking output of corn. Although the wheat and corn crops belong to somewhat the same regions, they may, nevertheless, vary diametrically from each other. You may find a small wheat crop, as in 1885, or in 1896, combined in each case with a record-breaking corn crop, or *vice versa* a record-breaking wheat crop, as in 1901, contemporaneous with a failure of the corn crop.

And so, while one might presume, from the wide prevalence of agriculture in America and its many interrelations with transportation interests, foreign trade, banking, and other occupations, that the general condition of business would follow rather closely the changes in the country's crops, one can see that such a generalization is only safe when rigidly qualified and carefully applied. One must bear in mind not only that the condition of the crops elsewhere will always affect the *value* of our domestic crops, whatever may have been their size, but also that other conditions, such as changes in financial legislation, passed or impending, may outweigh all of the influences of agriculture upon business; and, finally, one must remember that in a country as extensive as ours the effect of success or failure with any one kind of crop may always

<sup>1</sup> See the maps in the *Statistical Atlas*, 1900, plates 154, 156, 159.



be largely offset by an opposite condition with some of the other crops.

### III.

Confronted with the evidence that our several crops do not always succeed or fail in the same seasons, one naturally asks which of the crops it is whose success or failure exerts the greater influence over the conditions of general business. This is a question the solution of which is so difficult and involves the disentanglement of so many interacting factors that no one is competent to offer for it anything more decisive than a personal belief, and the best we can do here is to recall some of the points of view, most of them already mentioned, which must form the bases of that belief.

At first glance one might suppose that the crop which is most extensive, or at any rate which is most valuable, would be the one which is most influential for general business. And that would be the corn crop. Of all the industries prosecuted in this country the most considerable by far, measured by the value of its output, is corn-growing. Corn is our leading product, not only when we are speaking of agriculture, but also when we include every kind of production. Our leading crops in the year 1905, according to the estimates of the Secretary of Agriculture,<sup>1</sup> ranked as follows:—

Corn . . . . .	\$1,216	million
Milk and butter . . . . .	665	"
Hay . . . . .	605	"
Cotton . . . . .	575	
Wheat . . . . .	525	"
Eggs . . . . .	520	"
Oats . . . . .	282	"
Potatoes . . . . .	138	"
Barley . . . . .	58	"
Tobacco . . . . .	52	"
Sugar cane and sugar beets . . . . .	50	"
Rice . . . . .	14	"

<sup>1</sup> The estimates are those made at the end of the year in question. These estimates are always changed more or less before the annual volume is published, and at times even subsequent to its issue. They are at best, as are all of the figures in this paper, only estimates, derived from multifarious sources, and liable to large errors.



With these may be compared the following estimates of the value of the output in other leading industries during the same year or during the latest year for which figures are available:—

Pig iron . . . . .	\$412 million
Coal . . . . .	439 "
Gold . . . . .	86 "
Silver . . . . .	36 "
Railroad gross receipts . . . . .	1,906 "
Railroad net earnings . . . . .	639 "

The output of corn usually bulks three or four times that of wheat; and, although the price per bushel is considerably less, the value of the corn crop not infrequently aggregates a sum more than twice that of wheat, more, too, than the total value of the crops of wheat and cotton combined.<sup>1</sup> The annual output of corn is, therefore, quite naturally regarded by many as more consequential for trade than the output of our other crops. It represents an annual income in recent years of more than a billion of dollars, so that even a small percentage of change in its dimensions means a considerable fluctuation in the income of the community, and in the community's power to consume other goods. The following table shows the difference in the estimated value of the several crops from one year to another since 1890:—

<sup>1</sup> Estimated value of the leading American crops, from reports of the Department of Agriculture (millions of dollars):—

Years.	Corn. <sup>1</sup>	Wheat. <sup>2</sup>	Cotton.	Years.	Corn.	Wheat.	Cotton.
1890 . . .	679	474	280	1893 . . .	591	213	263
1891 . . .	759	456	259	1894 . . .	554	225	262
1892 . . .	783	445	309	1895 . . .	544	237	269
1893 . . .	658	383	250	1896 . . .	491	310	287
1894 . . .	640	330	253	1897 . . .	501	428	294
1895 . . .	635	275	269	1898 . . .	552	392	260
1896 . . .	610	314	257	1899 . . .	629	319	357
1897 . . .	646	310	291	1900 . . .	751	323	469
1898 . . .	677	365	292	1901 . . .	921	467	414
1899 . . .	597	342	308	1902 . . .	1,017	422	453
1900 . . .	754	334	350	1903 . . .	952	443	587
1901 . . .	836	513	313	1904 . . .	1,087	510	586
1902 . . .	642	322	268	1905 . . .	1,116	518	

<sup>1</sup> Farm value December 1.

<sup>2</sup> *Ibid.*

<sup>3</sup> As reported by Henry G. Hester, secretary New Orleans Cotton Exchange.

(Millions of Dollars.)			
	Corn.	Wheat.	Cotton.
1890 . . . . .	+157	—8	+42
1891 . . . . .	+82	+179	—37
1892 . . . . .	—194	—191	—45
1893 . . . . .	—51	—109	—5
1894 . . . . .	—37	+12	—1
1895 . . . . .	—10	+12	+7
1896 . . . . .	—53	+73	+18
1897 . . . . .	+10	+118	+7
1898 . . . . .	+51	—36	—34
1899 . . . . .	+77	—73	+97
1900 . . . . .	+122	+4	+112
1901 . . . . .	+170	+144	—55
1902 . . . . .	+96	—45	+39
1903 . . . . .	—65	+21	+134
1904 . . . . .	+135	+57	—1
1905 . . . . .	+29	+8	
Total . . . . .	1,339	1,090	634
Average . . . . .	83	68	42

It will be seen that the variations in the value of the corn crop during these fifteen years have reached an average of 83 millions, those of wheat an average of 68 millions, those of cotton an average of 42 millions. The variations in the value of the corn product as estimated have not, to be sure, exceeded the variations in the value of the wheat product by as large an average as might have been expected. Yet they have been, on the whole, more extensive, and, were no other conditions than variations in crop value and their effects upon consumption to be taken into account, the out-turn of the corn-fields would be rightly regarded as of greater significance for general business than that of any of our other crops, and ought naturally be looked to as the source of more considerable trade fluctuations.

From certain points of view, however, the crop which is most largely exported might be expected to affect trade conditions the most seriously in that its fluctuations may induce changes in the balance of trade, in the international movement of gold, and in the bank reserves. A falling off in such a crop might rapidly reverse our trade balance,

causing gold exports and a reduction in the cash holdings of our financial centres, and so might produce a serious stringency in the money market, while the success of such a crop, on the other hand, would not improbably result in an inflow of gold, the swelling of the bank reserves, and so might stimulate a spirit of confidence and introduce a period of buoyant expansion.

Ranked from this point of view, the cotton crop would at first glance appear the most important; for, if corn is our leading product, cotton is our leading export.

[Millions of Dollars.]

Year ending June 30.	Total ex- ports of domestic produce.	Exports of raw cotton.	Exports of wheat and wheat flour.	Exports of corn and corn-meal.	Exports of live stock.	Exports of meat and dairy prod- ucts.
1890	845	250	102	43		
1891	872	290	106	18	32	139
1892	1,015	258	236	42	36	141
1893	831	185	169	25	27	139
1894	869	210	128	30	35	146
1895	793	204	95	15	35	135
1896	863	190	91	38	41	133
1897	1,032	230	115	54	43	138
1898	1,210	230	214	75	46	167
1899	1,203	209	177	70	37	175
1900	1,370	241	140	87	43	184
1901	1,460	313	166	84	52	196
1902	1,355	290	178	17	44	199
1903	1,392	316	161	41	34	179
1904	1,435	370	104	31	47	176
1905	1,491	379	44	48	46	169

The value of our cotton exports far exceeds the value of the exports of any other article. In recent years our cotton exports have attained proportions averaging more than a million dollars per day, which is two or three times the value of the wheat exported, and all the way from three to eighteen times the value of the corn exported. In fact, they constitute on the average a fourth or a fifth of the country's total exports of domestic merchandise. The exports of raw cotton during the past decade have reached an annual average value of 260 million dollars, not to mention an export of manufactured cotton averaging

22 millions, while the wheat exports, both in the form of grain and of flour, have only reached an average of 138 millions, and the corn exports only 51 millions per year. In general, we export about two-thirds of our cotton products, between 30 and 40 per cent. of our wheat, but only 3 or 4 per cent. of our corn.<sup>1</sup> Of course it will be remembered that we export a large quantity of our corn product indirectly in the form of corn-fed cattle and meat products. Of this amount we have no means of estimation, not being able to separate the stock fed upon corn from that grown upon other fodder. Of live stock we have exported during the past ten years an annual average value of 43 million dollars, including cattle, hogs, horses, mules, and sheep, and of meat, including pork, beef, and mutton, and of dairy products, we have exported an annual average of 171 million dollars. Could we estimate the amount of corn which is exported in this form, we should doubtless find corn occupying a much more important position in the export trade than is indicated by the statistics just given of direct corn exports, yet obviously a change in the size of the corn crop exerts no immediate effect upon these indirect exports, and is only registered in the commerce of subsequent years.

Cotton, then, plays the predominant rôle in our export trade, and one might readily conclude that the out-turn

Per cent. of product exported.				Per cent. of product exported.			
Year.	Cotton. Per cent.	Wheat and wheat flour. Per cent.	Corn and corn-meal. Per cent.	Year.	Cotton. Per cent.	Wheat and wheat flour. Per cent.	Corn and corn-meal. Per cent.
1880	68.47	37.38	5.46	1893	71.20	41.47	4.11
1881	67.23	31.82	3.71	1894	69.83	31.46	2.36
1882	67.20	29.33	2.58	1895	65.00	27.07	4.70
1883	67.56	26.49	2.99	1896	70.59	33.93	7.83
1884	68.96	25.86	2.95	1897	67.82	40.91	11.14
1885	64.68	26.48	3.35	1898	65.12	32.97	9.21
1886	65.71	33.66	2.48	1899	65.18	34.00	10.30
1887	65.83	26.23	1.74	1900	62.87	41.36	8.62
1888	69.33	21.31	3.57	1901	64.47	31.37	1.84
1889	68.15	22.31	4.85	1902	65.01	30.28	3.04
1890	67.36	26.60	2.15	1903	60.27	18.92	2.59
1891	65.13	36.88	3.72	1904	61.55	7.99	3.66
1892	65.99	37.20	2.89				

The figures are for the years beginning July 1 in the case of wheat and corn and for the year beginning September 1 in the case of cotton.

of the cotton crop is of greater and more immediate significance for our foreign balance than the out-turn of any other crop. An examination, however, of the trade statistics for the past fifteen years, which were just cited, reveals grounds for a different conclusion. The value of our cotton exports, enormous as the aggregate has been, has not varied from year to year as widely as the value of our exports of wheat, and not in fact so very much more widely than our comparatively small exports of corn. During this decade and a half the widest fluctuations in the cotton exports occurred between the years 1892 and 1893 and again between the years 1900 and 1901, when the variations amounted to 70 and 72 million dollars respectively; yet twice during this same period the variations in the wheat exports exceeded these figures very strikingly, between 1897 and 1898, when the wheat exports increased by 99 million, and between 1891 and 1892, when our wheat exports advanced by the amazing sum of 130 million dollars. Notwithstanding, too, the minor proportions of our corn exports, their amounts have fluctuated from one year to another almost as widely as those of cotton. The failure of the crop in 1901, for instance, diminished the exports of corn and of corn-meal by no less than 67 million dollars; and, if we turn to the indirect effects visible a year or so later in the exports of meat and cattle, we find that the exports of live stock, for instance, declined by 1903 some 18 millions below the level of 1901, and the exports of meat and dairy products fell off some 17 millions during these two years. Even in the case of corn, therefore, the ultimate effects upon the export balance of a change in the size of the crop might be shown to be more severe than in the case of cotton.

The striking preponderance of cotton over all other products in our export trade, therefore, does not prove that the amount of our annual yield of cotton is the determin-

ing factor in our trade balance. Whatever the vicissitudes of the crop, the value of our cotton exports remains less liable to violent fluctuations than the value of our less extensive wheat exports. The reason is that the price of cotton adjusts itself more closely to the size of the American crop than does the price of wheat, and this gives greater constancy both to the value of the crop as a whole and to the value of the exports. American conditions do not necessarily control the price of wheat; for, although the United States produces more wheat than any other single nation in the world, it produces less than a quarter of the world's total supply. On the other hand, this country is the source of nearly three-quarters of the world's cotton, and what the world pays for that article is virtually determined by the mutations of the American crop. When the American crops are extraordinarily abundant, the world price of cotton tends to decline, and so the aggregate values of our cotton crop and of our cotton exports seldom increase proportionally to the increase in the quantity produced and exported. In fact, the greater bulk is sometimes more than offset by the lower price, and we may have such a situation as occurred in the years 1898-99, when the crop broke all known records of output, with one exception, and yet the total value of the crop was the lowest recorded during the past eighteen years. The value of the exports, too, of that superabundant year had been exceeded many times before, and have been invariably surpassed in the subsequent years, although their amount was with a single exception the greatest ever known. Conversely, a diminution in the amount exported, because of a comparative failure of the American crops, does not necessarily involve a serious reduction in the total value of the exports. The crop of the season 1903-04 was a comparative failure, being the smallest with one exception in seven years, yet its estimated

value was more than double that of the record-breaking year 1898-99, and exceeded that of any other year by more than 100 millions of dollars. The exports of cotton in this same year of so-called crop failure, though the smallest in bulk with one exception during a decade, outdistanced the best of records in value by nearly 60 millions of dollars. The vicissitudes of the cotton crop are, therefore, not so vitally significant for our foreign trade as one might suppose from a superficial consideration of the relative amounts exported of the various crops. Any increase or decrease in the bulk of the American cotton crop is more than likely to be compensated for by a converse movement in the price of cotton, and changes in the amount exported are apt to be offset by opposite changes in value. This is much less certain to occur in the case of wheat, because of the wider area in the world over which it can be produced, and the relatively smaller contribution which America makes to the total supply, which in the end determines its price. On the whole, then, we may tentatively conclude that the success or failure of the wheat harvest, more than that of any other vegetable product, is productive of sudden and important changes in the balance of trade.

But another consideration which we saw to be influential was the extent to which the crop is transported. Very little of our enormous corn supply is carried far from the locality of its production. Most of it is fed to live stock, especially hogs and cattle, which are raised in the region where it is produced, the principal meat-producing States being those of the corn belt. Of course, a failure of the corn crop will tend eventually (in the course, perhaps, of a year or so) to reduce the shipments of cattle and meat to the seaboard and to places of consumption, but fluctuations in the corn crop have but little direct and immediate effect upon the amount of freight carried. As for



cotton, domestic means of transport are only slightly affected by the size of the crop, two-thirds of which goes abroad, the greater part directly from Southern ports at Galveston, New Orleans, and Savannah, and principally in foreign vessels. The wheat crop, on the other hand, is much more closely connected with our transportation interests, for the wheat of the Middle West is carried far and wide by rail and steamship to all ends of the country. Not only the third of our total product which is destined for export, but a great part of the grain or flour destined for domestic consumption as well, has to be shipped over considerable distances. An abundance or shortage of the wheat crop, therefore, makes at once a serious difference in the amount of railway traffic, and is at once registered in the railway earnings. One can see, then, how indirectly a wide deviation in the wheat crop, by giving a new turn to railway earnings, may affect railway construction and expenditures for railway maintenance, and so in turn may even cause some reverberations in the iron industry. As the wheat crop appeared of primary significance for our foreign trade and the bank reserves of our financial centres, so it takes first rank also from the point of view of our railway and shipping interests.

Again, we observed that the success or failure of the harvests would affect those occupations in which agricultural products entered as a raw material. As for cotton, manufacturing interests will be directly touched by variations in the cotton crop, not only in the cotton mills of Massachusetts and Rhode Island, but also in the rapidly multiplying mills of Georgia and the other Southern States. Changes in the corn supply will directly affect cattle raising, and indirectly will affect the packing interests and the distillers. Changes in the wheat supply will have their direct effect in the centres of the milling industry. The output of each of the crops is thus of great consequence



to the business interests of a particular locality; but it would be extremely difficult, looking at the country as a whole, to estimate the comparative influence of the several crops in this connection. Only a third of the cotton remains for manufacture within the country, while more than two-thirds of the wheat and over nineteen-twentieths of the corn remain; but, on the other hand, cotton passes through many more processes in the course of its manufacture, and occasions employment for much more labor and capital for a given amount, than either of the other products. And, similarly, a somewhat greater proportion of the wheat than of the corn passes through a factory or mill, and gives further employment to labor. It appears fatuous, therefore, to attempt to decide which of these crops is connected the most importantly with other industries as a source of raw material.

Looking at the question broadly and from all points of view, although the matter is not one upon which a decisive judgment can be rendered, it would appear that in the past variations in the wheat crop have probably been the most significant for general business. That crop has often been worth less than half of the value of the corn crop, and changes in its amount have probably not affected the country's general income and consumption as much; but it has been much more closely connected with the transportation interests of the country, and it has exerted a more variable and more immediate influence upon the general trade balance. The cotton crop has frequently been more valuable, and has entered in far greater proportions into our foreign trade; but the cotton product does not affect American transportation interests to a similar extent, and the value of our cotton exports has remained comparatively steady, whatever has been their amount. Of the several American crops, then, we may tentatively conclude that that of wheat is most closely

related to business at large, and that the fluctuations in its output are the most widely felt. This by no means implies that the wheat crop has always been the dominant factor in determining the measure of prosperity in trade. Numerous other influences, as we have already seen, have played from time to time the leading rôle, and there have been occasional years, as in 1884-85, when a season of profound depression in business accompanied and followed a record-breaking output of wheat, or as in 1900-01, when a period of great buoyancy and commercial advance ensued upon a deficient crop of wheat. The supposition which we have made with regard to wheat is only one of general tendency, liable, as is every influence in this world, to be overbalanced by counteracting factors.

Granting that wheat has exceeded the other agricultural products in the past as a trade-influencing factor, its continued supremacy in the future is still open to question. Conditions are continually changing, and within the past two or three years there have not been lacking indications of the diminishing importance of the wheat crop as a factor in our trade balance. Our wheat exports declined so rapidly in 1904 and 1905 that for the time being we appeared no longer in the ranks of important wheat exporters. The total wheat exports during the fiscal year 1904-05 were the smallest in our history since 1872. Whether this situation marks a permanent change or only a temporary divergence due to a succession of short crops, one cannot as yet determine. Certainly, crops which would have seemed very large ten years ago would to-day be insufficient to feed our people and leave a surplus. Many have, therefore, jumped to the conclusion that we shall never regain our place as a wheat-exporting nation, and that with the rapid increase of our population we shall produce little more grain than is necessary for home consumption. If this should prove to be the case, the influ-

ence of the wheat crop upon our foreign balance, upon gold exports, and upon bank reserves, would evidently cease to play in the future the part it has played in the past.

#### IV.

The appended chart presents graphically the story of the crops during the past thirty-five years. During that period there have occurred, along with many minor fluctuations, two great movements of industrial and commercial advance, each of amazing proportions, and each initiated by a series of extraordinarily successful harvests in America which were coincident with extraordinarily poor harvests abroad. The first was the movement from 1879 to 1882, when the country was rapidly lifted from a six-year slough of business depression to one of the most prosperous periods in its entire history. Of this movement and its causes, which are familiar facts of history, some mention has already been made. Its propelling force arose unquestionably from the coincidence of a series of crop failures abroad in 1879, 1880, and 1881,—failures for which in duration and extent, it is said, "there had been no parallel in four centuries,"<sup>1</sup>—with two successive American harvests, in 1879 and 1880, whose dimensions exceeded all precedents in all of the leading products. These conditions not only resulted in huge profits for American farmers and dealers in produce; they stimulated the earnings of the railways; they induced a favorable balance of trade and the influx of more than 200 millions of gold during the three years from 1879 to 1881; and they instigated a spirit of confidence, an expansion of demand, and an activity of exchange which carried the records of American business of every sort far beyond the highest levels known before.

The second great movement of advance is that which

<sup>1</sup>D. A. Wells, *Recent Economic Changes*, p. 6.

began in 1897, and still continues to day (1906) after nine fabulous years of prosperity and almost uninterrupted increase. This movement also originated in an extraordinarily remunerative harvest, and its unprecedented duration is doubtless in large measure due to the prolonged continuance of agricultural success. After four years of prolonged depression, during which any revival of business had been prevented by the threat of a revolutionary change in our standard currency, the way was cleared of this hindrance at last in the autumn of 1896 by the overwhelming defeat of the extremist program in the Presidential election. To this defeat the agricultural situation of that autumn contributed, as every one remembers, a decisive influence. The conjunction of a failure of the wheat crop in India with a shortage in Australia served to raise the price of American wheat from 53 cents per bushel in August to 94½ cents at the time of the election in November, upsetting the arguments of those who had advocated the unlimited coinage of silver as the only means of raising prices, and turning the electoral tide against them in several of the doubtful Middle Western States. The principle obstacle to recovery being thus removed, in the following year a strikingly favorable turn in agriculture gave the necessary fillip to trade and set the country once more on the highway of prosperity.

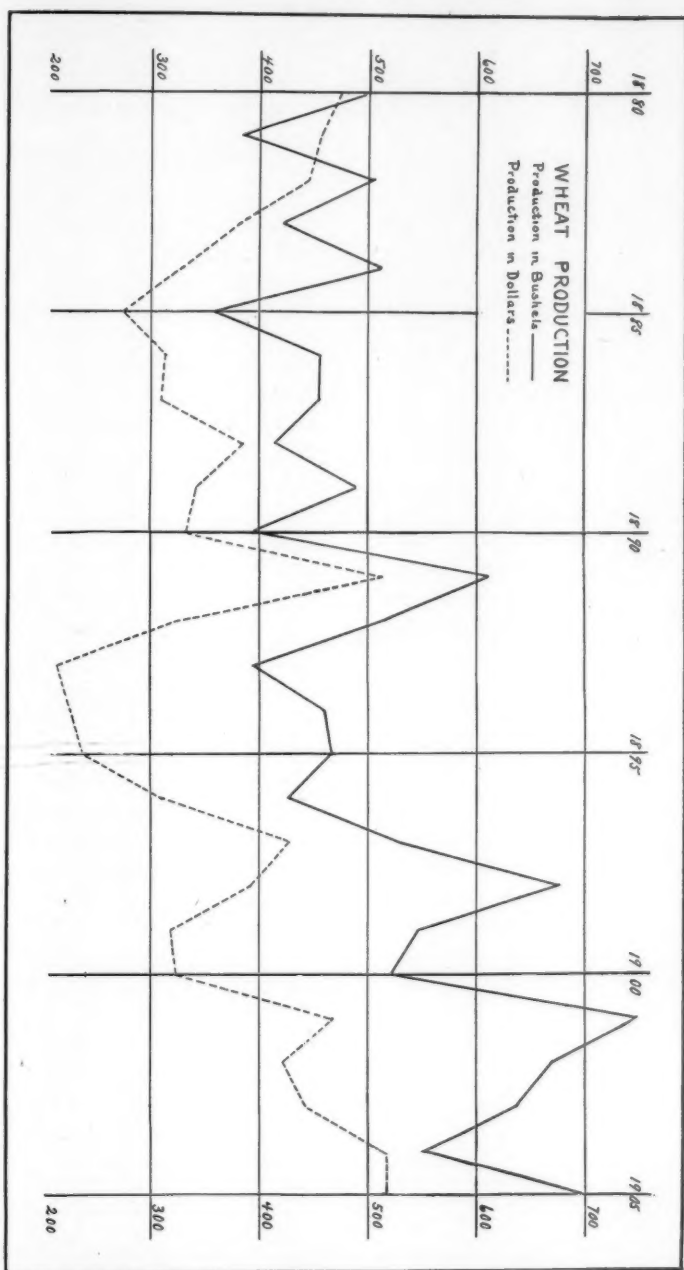
Early in the summer of 1897 it became known that the crops were again a failure in India, Australia, and in the Argentine Republic. Russia had had a poor wheat crop in 1896, and seemed likely to have another in 1897. In France on account of a scorching drought the harvest was very deficient. In Austria storms and floods had done great damage. In a word, for one reason or another, the season proved disastrous all over Europe, and the European wheat crop fell short of that of the previous year by some 350 million bushels,—a loss of about one-third.

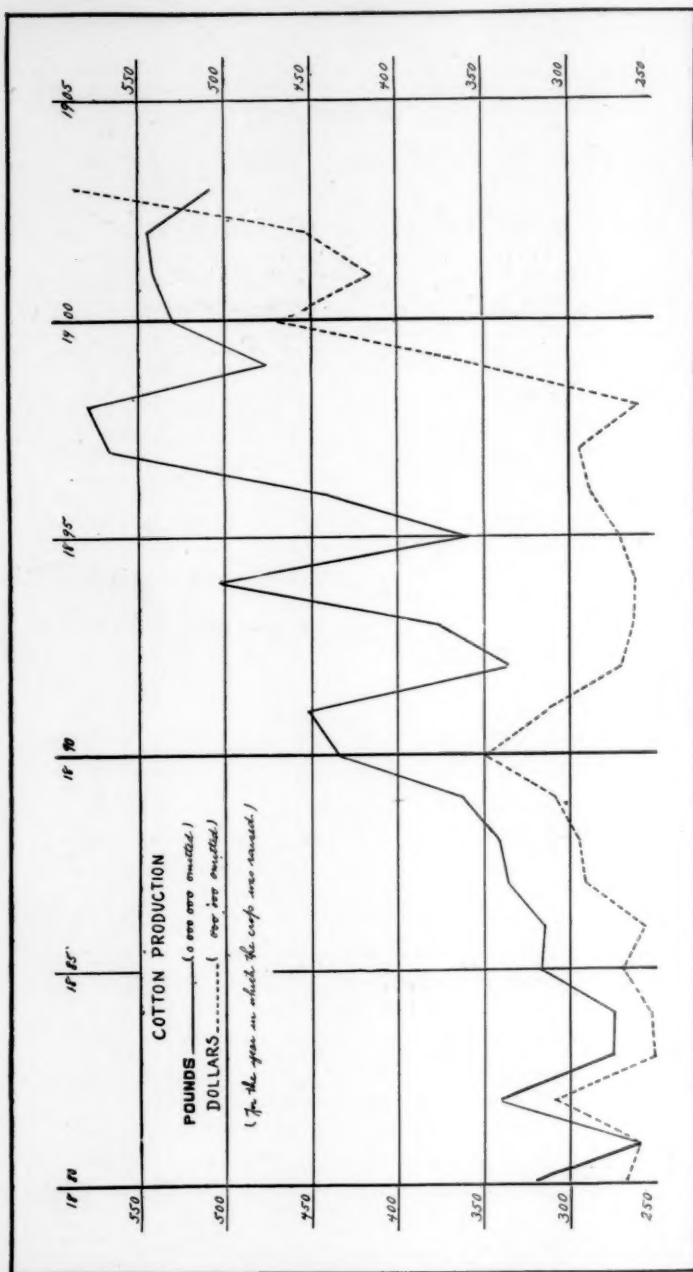
The demand for American wheat in consequence assumed new dimensions, and the price in August ran considerably above a dollar per bushel, or more than twice the price prevailing at that season a year before. The American crop, meanwhile, ran ahead of that of the previous year by 145 million bushels, and proved with one exception the largest in our history. The farmers of the Middle West got two or three times as much per bushel as they had been receiving for several years; and, as they disposed of their increased output at these much advanced prices, they were rapidly lifted from a condition of extreme depression to one of prosperous activity. They began to pay off their farm mortgages, and so set locked up capital free; and at the same time they greatly enlarged their purchases of goods. This in turn gave a stimulus to trade in the factory centres of the East, which were called upon to meet the new demand for manufactured goods. The same conditions added enormously to the tonnage and earnings of the Western railroads, opening up a new era of prosperity for them; and, as the trade of transportation is one of great importance and of wide-spread ownership, the whole country reaped an advantage.

The bearing of the crop situation of 1897 upon our foreign trade was no less important. Our exports of wheat and corn increased in the course of the year that followed by a valuation of over 120 millions of dollars, and our relations with the international market were reversed. Instead of exporting gold, we imported 142 millions. Through this movement not only was credit stimulated by the enlargement of the cash resources of the banks, but also by the new accessions to the government's gold reserve, which had been passing through the direst of vicissitudes during the years just preceding, and which now rose to the highest figure ever reached in the country's history. Great agricultural windfalls had once more set

the wheels of trade in motion and initiated a new period of prosperity.

The prolonged continuance of this upward tide beyond the term of any previous period of prosperity in the past half-century has amazed the world and aroused much speculation as to its cause. Some have attributed it to the wane of radicalism in politics and the growing conservatism of our legislatures in matters of currency and finance. Some have connected it with the increasing concentration of control in industry and transportation which has obliterated the wars between rival interests and the protracted discrepancies between supply and demand that formerly afflicted the country's business. Many have credited it to the increasing output of gold, which has almost doubled in the past ten years and more than trebled in the past twenty, and which has tended steadily to inflate bank reserves, prices, and profits. Others have attached great importance to the growing centralization of power among the New York banking interests, and the extension of their international affiliations, with the consequent increase in their ability to secure foreign assistance in times of impending trouble. Unquestionably, however, another factor not to be overlooked in explaining the longevity of the period is the persistent success of American agriculture during these recent years,—a success which, unlike that of previous periods, has for the time being depended neither upon the abundance of the American crops nor upon the failure of the crops abroad. There have been no serious crop failures in Europe since 1897, and upon several occasions since then one or another of the American crops has fallen short; yet the prosperity of American agriculture not only has remained unimpaired, but has actually advanced to ever higher and







higher levels. With regard to two of the agricultural staples of the country, cotton and wheat, the demand throughout the world has from all appearances increased more rapidly during the past half-dozen years than the output, so that in several cases, even when the harvests have shown a decline in bulk, their aggregate value has expanded.<sup>1</sup> Whether the increasing demand is the consequence of general prosperity or not is a matter of question, but certain it is that the world's consumption of these staples for some reason or other has taken on new dimensions, and, notwithstanding an increasing output, less has been produced than could have been sold with a profit. The prices of cotton and wheat during recent years have risen in consequence to levels not witnessed before for a generation, and one has to turn back to the year 1883 to find their prices averaging as high as during the past two years, 1904 and 1905. In fact, both the cotton and the wheat crops of the last three or four years have aggregated a value not far from double those of similar years a decade ago.

The agricultural situation of to-day is novel in many respects. In previous trade cycles of the past forty years, agricultural conditions in the West and the South have often tended to act as drags upon the resources of the industrial and commercial centres of the East. The farming population was poor and heavily mortgaged. They had to work very largely on credit, and to wait until the harvest before making the current year's expenditures. They had not means sufficient to harvest their own crops, much less to carry over stocks from the superabundant years to meet an anticipated shortage. Under such circumstance any considerable diminution in the crops was very apt to cause serious reaction or to prolong an existing depression. But during these late years the great farming areas, whether

<sup>1</sup>See appended charts, No. 1 and No. 2.

of the West or South, have become financially independent and prosperous as never before. Their people have lifted many of their mortgages, and now are lenders where before they were borrowers. They are much better able to cope with any temporary shrinkage in their harvests or to take care of any temporary surplus. As a matter of fact, the agricultural situation to-day, instead of being an aggravating influence in a general decline, as was the case ten or twelve years ago, has become the bulwark upon which the mercantile and financial interests of the country rely to break the force of every threatened reaction.

We have seen how all the great movements of business expansion in America during recent times have been initiated by conditions of agricultural success. It has also been true that most of the turning-points in the other direction have been preceded by agricultural failure. The year 1872, which marked the beginning of the first long period of retrenchment during the years under consideration, was preceded in the autumn of 1871 by a serious shrinkage in the cotton crop and by an appreciable decline in the crops of corn and wheat. The year 1882, which marks the beginning of the next commercial decline, ensued upon a destructive drought that extended over most of the United States, and caused a shrinkage in all of the staple crops. The crop failures of the autumn of 1881 cut down freight earnings the following year by some 45 million dollars, reduced our export trade by 150 millions, converted a favorable into an unfavorable trade balance, and resulted in the export of 32 millions of gold before the following June. They thus furnished the initiatory impulse for the long decline of the middle eighties. Turning to the early nineties, we have seen how in this complicated period the marvellously favorable crop conditions in 1891

had failed, because of political uncertainties, to stimulate a repetition of the prosperity of the resumption period. In the first months of 1892 they succeeded in swelling the tonnage of the railroads and the exports of domestic produce to tremendous volume, and so reanimated general business temporarily; but in the following autumn (1892) the crops shrank back to their former proportions. The harvests of wheat and corn and cotton all registered a decline; and, with the impetus of agricultural success removed, the country's business entered rapidly upon the downward course which culminated in the memorable crisis of 1893. All three of these periods of revulsion were preceded by, if not altogether caused by, crop shortage.

Looking back over the sweep of economic events in the United States during the past four decades, while one must admit that the influence of the crops has not always been the predominant factor in business, one can readily perceive their usual and very extended significance. The relation between agricultural success or failure and the prosperity or decline of general business has not, to be sure, proved as close and inevitable as Jevons and certain other students of crises have been inclined to believe. Crises have not ensued invariably and immediately upon every crop failure, nor have eras of upbuilding followed with clock-like regularity after every bountiful harvest. Yet one cannot review the past forty years without observing that the beginnings of every movement toward business prosperity and the turning-points toward every business decline (movements which frequently, it will be remarked, have antedated the actual outbreak of crises by several years) were closely connected with the out-turn of the crops. In other words, the presumptive relationship, for the existence of which we found abundant reason earlier in the paper, we find to be a matter of experience and historical fact.

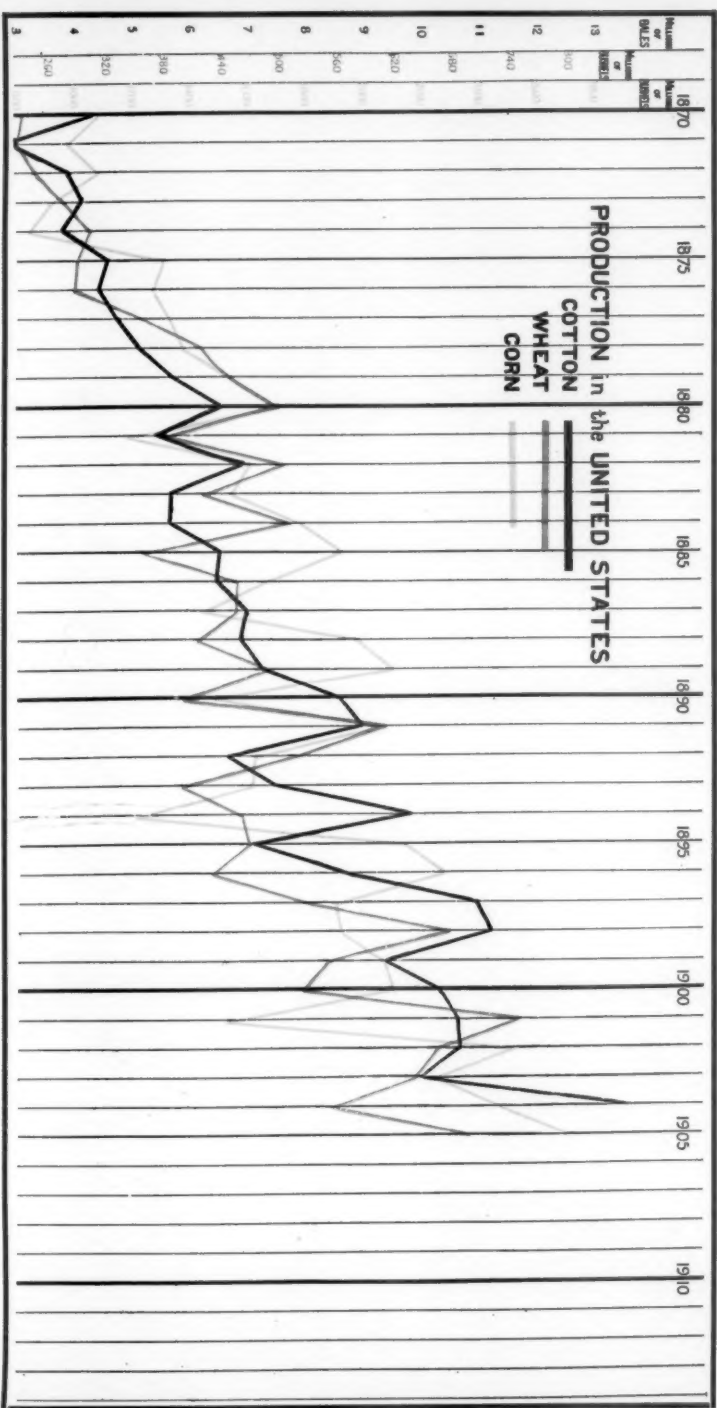
A. PIATT ANDREW.

## THE AMERICAN CROP FOR 35 YEARS.

Year. <sup>1</sup>	Cotton, millions of bales. <sup>2</sup>	Wheat, millions of bushels.	Corn, millions of bushels.
1870 . . . . .	4.35	235	1,094
1 . . . . .	2.97	230	991
2 . . . . .	2.93	249	1,092
3 . . . . .	4.17	286	932
4 . . . . .	3.83	308	850
5 . . . . .	4.63	292	1,321
6 . . . . .	4.47	289	1,283
7 . . . . .	4.77	364	1,342
8 . . . . .	5.07	420	1,388
9 . . . . .	5.76	448	1,547
1880 . . . . .	6.60	498	1,717
1 . . . . .	5.45	383	1,194
2 . . . . .	6.94	504	1,617
3 . . . . .	5.71	421	1,551
4 . . . . .	5.70	512	1,795
5 . . . . .	6.57	357	1,936
6 . . . . .	6.50	457	1,665
7 . . . . .	7.04	456	1,456
8 . . . . .	6.93	415	1,987
9 . . . . .	7.31	490	2,112
1890 . . . . .	8.65	399	1,489
1 . . . . .	9.03	611	2,060
2 . . . . .	6.70	515	1,628
3 . . . . .	7.54	396	1,619
4 . . . . .	9.90	460	1,212
5 . . . . .	7.15	467	2,151
6 . . . . .	8.75	427	2,283
7 . . . . .	11.1	530	1,902
8 . . . . .	11.27	675	1,924
9 . . . . .	9.43	547	2,078
1900 . . . . .	10.38	522	2,105
1 . . . . .	10.68	748	1,522
2 . . . . .	10.72	670	2,523
3 . . . . .	10.01	637	2,244
4 . . . . .	13.55	552	2,467
5 . . . . .	—	693	2,707

<sup>1</sup> The year quoted is the year in which the crop was raised; e.g., in the case of cotton, the year beginning September 1.

<sup>2</sup> The bales have tended to grow heavier, and have varied from 440 to 490 lbs.





## THE GERMAN STEEL SYNDICATE.

COAL and iron are the foundations upon which national industrial greatness is based. Germany is pre-eminent in both, and in both of them there are powerful combinations. In the coal industry Germany takes the third rank among the nations of the world, but in iron and steel she is second only to the United States. In 1904 the pig iron production of the four leading countries of the world was approximately as follows: the United States 16,781,000, Germany (including Luxemburg) 10,119,000, Great Britain 8,500,000, and France 3,000,000 tons.<sup>1</sup> In steel production Germany has an even greater lead over Great Britain. The present position of Germany is the result of recent developments, which, though rapid, have been very steady.

The two primary natural conditions for the iron industry are ore supply and fuel. In both of these respects Germany is richly endowed. In regard to iron ore production Germany is only surpassed by the United States: in 1904 the total output of iron ore was 22,047,393 tons.<sup>2</sup> The coal output in 1905 (excluding lignite) was 121,190,249 tons. For iron ore production by far the most important district is the "Minette," which lies in Lorraine and Luxemburg, and extends over their borders into France and Belgium. The next most important region is on the right bank of the Rhine in the valleys of the Sieg, the Lahn, and the Dill. The production of ore in the other regions is comparatively small, the two most noteworthy regions being one in the

<sup>1</sup> *Jahrbuch f. d. Oberbergamtsbezirk Dortmund*, 1901-04, p. 747.

<sup>2</sup> *Vierteljahrshefte zur Statistik des Deutschen Reichs*, 1905, Heft IV.: of which Prussia 3,757,851 tons, Alsace-Lorraine 11,135,042 tons, and Luxemburg 6,347,771 tons.

province of Hannover and the Duchy of Brunswick and another in Upper Silesia. There are three great coal regions in Germany. The greatest is that of the Dortmund or Ruhr district, which produces more than half of the total. The next in importance is Upper Silesia, while the Saar is third. The coal deposits of Lorraine, which are nearest to the great ore deposits of the Minette, are not yet developed. The nearest district of fuel supply is the Saar, but the coal of that region is not well adapted to the reduction of ores. The Minette, therefore, must be reduced by the Ruhr coal, and an exchange is made between the two regions, the pig iron industry being about equally divided between them. The Ruhr also uses a good deal of ore from the Sieg, Lahn, and Dill districts, as well as a large amount of foreign ore. In Upper Silesia the iron ore and coal are found in close proximity, but the supplies of the former are too scanty for the industry of that region, and a large proportion has to be imported, especially from Austria and Hungary. The Ruhr coal district is not only first in the magnitude of its coal output, but also in the quality of the coal, which is especially adapted to the production of coke. In this respect neither Silesia nor the Saar can compare with it. Although the enormous iron ore production of the Minette is of a low grade, its cheapness makes up for the deficiency in iron. The Minette ore is a brown hematite with from 35 to 40 per cent. of iron<sup>1</sup> and from 0.04 to 1.96 per cent. of phosphorus.<sup>2</sup> The ore deposits are of great depth, and sometimes as much as fifty metres thick.<sup>3</sup> On account of its high percentage of phosphorus this ore was not much valued

<sup>1</sup> Gouvy, *État actuel des industries du fer et de l'acier dans les provinces du Rhin et de la Westphalie*, Paris, 1903, p. 32.

<sup>2</sup> Tübben, *Die Eisenhüttenindustrie im Oberbergamtsbezirk Dortmund und ihre Versorgung mit Eisenerz. Mittheilungen ueber den rheinisch-westfälischen Steinkohlen-Bergbau. VIII Allgemeinen deutschen Bergmannstag zu Dortmund*, 1901, p. 323.

<sup>3</sup> Krauss, *Eisen-Hütten-Kunde*, I. Th. p. 21.



until the discovery of the Thomas process (basic converter). The ore of Siegerland, red hematite, contains considerable manganese, and is of a high quality.

Although Germany is a large producer of iron ore, she is also a large importer and exporter. In 1904 Germany imported 6,061,127 tons of iron ore and exported 3,440,846 tons. Large quantities are imported for mixing with domestic ores. In the Rhenish-Westphalian district iron ore is used from over one hundred different places, including almost all known sorts,<sup>1</sup> and coming from almost all parts of the world. The usual mixture in this region is Minette, 35-40 per cent.; Swedish, 35-40 per cent.; red hematite, 10 per cent.; and other, 10 per cent.<sup>2</sup> In Silesia a typical mixture is said to be 27 per cent. of the local ore with 21 per cent. of cinder, 23 per cent. of Swedish, and 25 per cent. of Hungarian ore.<sup>3</sup> Another reason for the large iron ore imports is that there are many iron furnaces far from the domestic regions of supply, so that the foreign ore can often be delivered more cheaply.

The distribution of the pig iron production of Germany and Luxemburg is shown in the following table:<sup>4</sup>—

<sup>1</sup>Tübben, p. 316.

<sup>2</sup>Gouvy, pp. 32-33.

<sup>3</sup>Symphér, *Die wirtschaftliche Bedeutung des Rhein-Elbe-Kanals*, Berlin, 1899, p. 144.

<sup>4</sup>*Stahl u. Eisen*, February 1, 1906, p. 171.

PRODUCTION OF PIG IRON IN GERMANY (INCLUDING LUXEMBURG) IN 1905.  
(IN THOUSANDS OF TONS: TOTAL 891 = 891,000 TONS.)

Kind.	Rhineland-West- phalia, except the Saar and Siegerland.	Siegerland, Lahn district, and Hessen Nassau.	Silesia	Pome- rania.	Hanover and Brun- swick.	Bavaria, Württem- berg, and Thuringia.	Saar.	Lorraine and Lux- emburg.	Total.
Foundry . . . . .	891	177	94	155	54	28	83	423	1,903
Acid Bessemer . . . . .	263	35	48	—	77	—	—	—	435
Steel iron and other Spiegeleisen . . . . .	330	283	98	1	—	2	—	—	714
Thomas or basic Bessemer . . . . .	2,898	01	259	—	240	133	731	2,884	7,115
Forge or Mill Iron . . . . .	25	213	362	—	—	14	—	213	827
Total . . . . .	4,377	711	861	156	371	177	814	3,521	10,988

13 tons only.

Looking first at the production of the different districts, it will be observed that Rhineland-Westphalia (or the Ruhr) has the largest production in 1905, and that Lorraine-Luxemburg (which includes a large part of the Minette district) is second. Together they produce over 70 per cent. of the total. Silesia and the Saar produce only about 8 per cent. and 7 per cent. respectively. If the table be examined with regard to the kind of iron produced, it will be observed that most of the iron is of Thomas or basic Bessemer steel,—in 1905 over 60 per cent., while foundry iron came second with about 17 per cent., and mill iron or puddled iron third with about 8 per cent. Acid Bessemer steel is almost negligible to-day in Germany. The bulk of the Thomas steel is produced in the German Minette or in the Ruhr, but a not inconsiderable amount is also produced in the Saar. Most of the foundry iron is produced in the Ruhr and the Minette, particularly in the former. Silesia, which occupies a very subordinate position in other respects, is the chief producer of mill iron. The two leading facts are, however, the great preponderance of the Minette and the Ruhr in the German iron industry and the predominance of Thomas or basic Bessemer steel.

The German steel industry is quite as important in the production of finished products as in the raw material. The distribution of the manufacturing industry does not correspond very closely with the distribution of the blast furnaces. Bavaria, for example, has a large machine industry, but only a trifling output of pig iron. The Minette, though it rivals the Ruhr in the output of pig iron, cannot compare with it in the output of finished products. It is only recently that the Minette has begun to develop the manufacture of rolled products on a large scale.<sup>1</sup> Only about one-third of the pig iron produced in the

<sup>1</sup> Bosselmann, "*Ersbergbau u. Eisenindustrie in Lothringen-Luxemburg*," *Schriften d. Vereins f. Social-Politik*, Bd. 106, p. 4.

Lahn and Dill valleys is worked up there.<sup>1</sup> In Silesia, however, there is an extensive output of rolled products.

Between the various producing regions there is naturally a lively competition for the German market. Especially for pig iron there tend to be developed certain natural regions of supply determined, in part, by the costs of transportation. This is distinctly the case as between Silesia and the western industrial regions. Silesia controls the supply in the far eastern provinces, where it meets western competition only in finished products.<sup>2</sup> Customs duties prevent it from developing its sales to any great extent into Austria and Russia.<sup>3</sup> For the two great western producing regions, the Ruhr and the Minette, there does not appear to be any distinct recognized division of markets, although the latter region is naturally more directed to the export trade.

Germany is a great consumer as well as a great producer of iron products, and the consumption has increased rapidly with the great development in production, population, and wealth. In 1903 the total consumption was greater than in England, although it was much below that of the United States. Reckoned, however, according to population, the consumption of England was greater than that of Germany.<sup>4</sup> The total consumption depends not only on

<sup>1</sup> Heymann, *Die gemischten Werke im deutschen Grosseisengewerks*, 1904, p. 129.

<sup>2</sup> Kuh, "Die Hüttenindustrie Oberschlesiens," *Schrift. d. Ver. f. Soc.-Pol.*, Bd. 106, pp. 177, 191.

<sup>3</sup> *Verhandlungen ueber die Stahlwerksverbände*, Anlage 2, p. 34. As frequent reference is made to the Imperial Cartell Inquiry, the full titles of the various cartell investigations cited are here given, with short titles for reference. The Siemenroth edition is used except for the *Stahlwerksverband*. The general title is *Kontraktatorische Verhandlungen ueber deutsche Kartells*. The particular investigations referred to are: *Verhandlungen ueber die rheinisch-westfälischen Roheisensyndikat* ["*Enquete*, V."]; *Verhandlungen ueber den Halbezeug-Verband* ["*Enquete*, VI."]; *Verhandlungen ueber den Verband deutscher Drahtwalzwerke* ["*Enquete*, VIII."]; *Verhandlungen ueber den Weissblechverband* ["*Enquete*, IX."]; *Verhandlungen ueber die Stahlwerksverband, Beilage z. deutschen Reichsanzeiger*, August 18, 1905 ["*Enquete*, S.V."].

<sup>4</sup> Martin, *Die Eisenindustrie in ihren Kampf um den Absatzmarkt*, Leipzig, 1904, p. 53.

the production, but also on the movement of imports and exports. Germany is both an importer and exporter of iron products. The movement for 1904 is shown in the following table:<sup>1</sup>—

	<i>Imports.</i>	<i>Exports.</i>
Pig iron and half-products . . . . .	240,233 tons	701,985 tons
Iron manufactures . . . . .	101,492 "	2,022,01 "

The chief imports were pig iron, scrap iron, steel bars, iron for ploughshares, and tin plate. The chief exports were pig iron, half-products, beams and girders, rails, steel bars, sheet bars and sheets, rods, coarse iron wares, etc. The principal foreign markets for German half products in 1904 were England and Belgium. More than half of the total was destined to England.<sup>2</sup> The exports of rails from Germany, on the other hand, were widely distributed, though England again was the chief market. England was also the chief purchaser for beams and girders. In regard to the official export statistics a great difficulty always exists on account of the fact that the given country of destination is not the country of final destination or consumption. The exports to Holland and Belgium are, in large part, really destined for England.

Although the German iron industry is extremely formidable in international competition, it undoubtedly finds a good deal of its strength in the existence of an effective protective tariff, which secures the home market and enables it to dump its surplus products in the world markets. The protection established for the iron trade has a vital relation to the existence of the various iron and steel combinations. Before the present protective policy for the iron trade was inaugurated, the production lagged far behind the consumption.<sup>3</sup> In 1878 a special committee of inquiry was appointed to investigate the subject, which

<sup>1</sup> *Jahrb. f. d. O. Dortmund*, 1901-04, p. 734.

<sup>2</sup> *Enquete, S.V.*, Anlage 7.

<sup>3</sup> *Heymann*, p. 137.

almost unanimously agreed that protection for the iron industry was necessary, and this conclusion was followed by a law (1879) which imposed duties higher than those recommended, which remained in effect without substantial change down to the recent recasting of the tariff (to go into effect March 1, 1906). The duties on an ad valorem basis, both in the old and in the new schedules, amount to about 15 per cent. on pig iron, 20 per cent. on rails, 16 per cent. on sheets, and 9 per cent. on rods.<sup>1</sup>

There are a number of large iron and steel concerns in Germany which combine with the manufacture of steel the production of the raw materials, iron, ore, coal, coke. But the individual concern has ceased to be the unit in German industry to a large extent. The modern unit is the cartell. The most important matters of commercial and economic policy are determined to-day by these combinations.

Combinations in the German iron industry are of ancient date, and have assumed forms adapted to the contemporary economic organization.<sup>2</sup> The distinction between the early methods of combination and the modern system lies not only in the more comprehensive character of the latter, but also in the fact that the modern iron industry is established on a stupendous scale, and operates for the world market. It is often stated that the first German cartell was the tin plate combination, which was formed in 1862;<sup>3</sup> but this was not the first cartell even in the iron trade. Rail pools existed over fifty years ago.<sup>4</sup> It was not until the seventies, however, that they acquired much importance.

<sup>1</sup> Voelcker, "L'État actuel de l'industrie sidérurgique allemande et sa organisation," *Revue économique internationale*, Décembre, 1904, p. 734. Cf. *Der deutsche Zolltarif vom 25 December 1902 mit dem auf den Handelsverträgen des Deutschen Reichs . . . beruhenden Bestimmungen*, Berlin, 1905.

<sup>2</sup> Cf. Heymann, pp. 56, 59, 60, 96, 135, 136, etc.

<sup>3</sup> Grossmann, "Ueber industrielle Kartelle," *Jahrb. f. Gesetzg.*, Jahrg. 1891, p. 243.

<sup>4</sup> Kollmann, *Der deutsche Stahlwerksverband*, Berlin, 1905, p. 6.

There was an over-development of the iron industry at the beginning of that decade, and during the following depression the producers resorted to combinations to restrict their output and to maintain prices. The early cartells were generally quite limited as respects the commodities and the region included in the agreement. The first important exception to this (apart from rail pools) was the combination of German Rolling Mills, which originated in 1886 in Silesia and expanded to include the whole country. It exercised a very marked influence over the German iron trade down to its dissolution in 1893, in the face of new competition.<sup>1</sup> The head of this combination, Caro, declared at the time that it failed because a cartell of rolled products could not stand alone: it was necessary to cartell the raw materials and the finished products also. At that time, however, the producers of raw materials—coal and pig iron—had not been able to extricate themselves from the position into which their previous over-development had brought them. They were also facing a constant decline in prices, owing to rapid reductions in the cost of production due to technical improvements.<sup>2</sup> The rolling mills and the manufacturers of finer wares were in a relatively favorable situation. They often got their raw material under cost.<sup>3</sup> The large mixed works, or those which combined the production of raw materials with the manufacture of commercial products, complained of the disadvantage at which they were placed as compared with the straight rolling mills (*reine Walzwerke*).<sup>4</sup> There was no advantage at that time for a rolling mill to acquire coal mines or to establish blast furnaces, and hence the

<sup>1</sup> Cf. Caro, "Der deutsche Walzwerkverband," *Schriften d. Vereins f. Soc.-Pol.*, Bd. 60, pp. 43 et seq.

<sup>2</sup> Cf. Kestner, *Die deutschen Eisensillen*, 1902, p. 13.

<sup>3</sup> Vogelstein, "Die rheinisch-westfälische Montan- u. Eisenindustrie," *Schriften d. Vereins f. Soc.-Pol.*, Bd. 106, pp. 81-83.

<sup>4</sup> Heymann, p. 149.



policy of combining the various stages of production, which had been quite conspicuous at an earlier period in the Ruhr district, did not find frequent illustration at this time.

Fundamental changes appear in the general conditions of the industry at the beginning of the nineties. A tolerably successful pig iron cartell had been established in the Ruhr in 1886,<sup>1</sup> but it was not until the Coke Syndicate was accomplished in 1890 that a secure basis was formed. The iron industry was still in a weak position. In 1892 the pig iron producers of the Ruhr and the Minette got together, while a pig iron cartell was formed in Siegerland two years later.<sup>2</sup> The ore production in Siegerland was combined in the same year.<sup>3</sup> In the Minette the ore was almost entirely controlled by the blast furnaces.<sup>4</sup> More important than all of these was the formation of the Coal Syndicate in 1893.<sup>5</sup> This powerful combination dominated the whole industry during the ensuing decade. Thus the foundations were laid for a new régime in the iron trade, in which those who controlled the raw materials were to have a great advantage. The days of cut-throat competition between mining companies, in which the iron manufacturer could speculate on the demand for finished products with the assurance that the raw material would be abundant and cheap, were over. The new fuel cartells were founded on the principle of monopoly control, and the pig iron cartells partook, to some extent, of that character also. The combinations among the manufacturers of iron products did not keep pace with these developments among the producers of raw materials. The cartell of German Rolling Mills was dissolved in 1893, and no general combination appeared to take its place. The rail pool seems to have maintained a continuous existence, but the

<sup>1</sup> Grossmann, pp. 240-241.

<sup>2</sup> Heymann, pp. 72, 152.

<sup>3</sup> Sayons, *La crise allemande*, p. 116.

<sup>4</sup> Bosselmann, p. 15.

<sup>5</sup> Cf. Walker, *Monopolistic Combinations in the German Coal Industry*, New York, 1904.

beam pool was dissolved about 1892, though reorganized shortly after.<sup>1</sup>

In 1894-95 a marked improvement appeared in the commercial situation in general, and in the iron trade in particular, which lasted until 1900. Although some of the earlier cartells may have been "*Kinder der Noth*," the period of prosperity furnished apparently a healthful environment for growth.

The most important event of this period was the establishment of a half-products cartell. This innovation was a consequence of new technical conditions, and particularly the development of great steel mills for the production of Thomas or basic steel. The characteristic products of these steel mills are rails, beams, and half-products (ingots, billets, sheet bars, etc.). The half-products are the raw material of the rolling mills. The large steel works found that the straight rolling mills were not keeping pace with their development, and that it was safer, as well as more profitable, to work up their own crude steel to a large extent. They were generally mixed works, controlling their own supplies of fuel, ore, and pig iron. These works formed the Half-products Syndicate (*Halbzeugverband*), and this cartell, combined with the rail and beam pools, was the immediate forerunner of the present Steel Syndicate. At first, however, they had a price agreement simply, and it was somewhat later (1899) that the sale of half-products was syndicated.<sup>2</sup> This cartell soon included all the great steel works of western Germany. The works supplied the straight rolling mills with their raw material, and at the same time competed with them in the manufacture and sale of rolled products. This put the rolling mills in a dangerous position, because, techni-

<sup>1</sup> Heymann, p. 153; Kollmann, pp. 7, 8.

<sup>2</sup> Cf. Voelcker, *Bericht ueber das Kartellwesen in der inländischen Eisenindustrie*, Berlin, 1903, p. 52. Cf. A. Kirdorf, *Enquete*, VI., p. 410; Kollmann, p. 7.

cally, they were no match for the great steel works. In 1897 a comprehensive but complicated cartell was established between the pig iron producers of the Ruhr, the Minette, and Siegerland.<sup>1</sup> In the period between 1895 and 1904 the principal cartells established for rolled products were as follows: heavy sheets<sup>2</sup> and rods<sup>3</sup> in 1897, wire nails in 1898,<sup>4</sup> and light sheets in 1902.<sup>5</sup> The rolling mills failed, however, to cartell steel bars. In Silesia rolled products were effectively cartelled ever since 1887, in one form or another.<sup>6</sup> These cartells do not comprise, by any means, all of those found in the steel industry during this period, but were the most important connected with the development of organization in the steel trade.<sup>7</sup>

The development of cartells in various steel products called forth protective organizations among the consumers. An important organization of this sort was the Rhenish-Westphalian Purchase Association for pig iron, which was established in 1901.<sup>8</sup> More important than this was the Association for the Protection of the Interests of the Consumers of Half-products which was formed in 1902. This included forty-two concerns, mostly straight rolling mills, with a demand (in 1903) for 560,000 tons.<sup>9</sup> There were numerous other purchasing combinations, especially during the recent crisis.

The reasons for the formation of the Steel Syndicate, according to an official statement made to the government, were substantially as follows: The discovery of the Thomas or basic process had made practicable the utilization of the immense deposits of phosphoric ore in the

<sup>1</sup> Heymann, p. 153; Voelcker, *Bericht*, pp. 30-37.

<sup>2</sup> Kestner, pp. 53, 56.

<sup>3</sup> *Enquete*, VIII., pp. 690, 697.

<sup>4</sup> *Ibid.*, p. 711.

<sup>5</sup> *Statistik d. Oberschles. Berg- u. Hüttenwerke*, 1902, p. 80.

<sup>6</sup> *Enquete*, S. V., Anlage 2.

<sup>7</sup> Cf. Voelcker, *Bericht*, p. 73 et seq.; *Enquete*, VI., pp. 375, 376; *Deutsche Industrie-Zeitung*, 1903, p. 141.

<sup>8</sup> *Enquete*, V., pp. 353, 354.

<sup>9</sup> *Ibid.*, VI., p. 401.

Minette district, and had given rise to a number of large steel works adapted to that purpose. This, in turn, had induced the existing steel works to modernize and enlarge their plants, which caused an overproduction of steel, and imposed upon the steel works the necessity of combining to restrict their output. The earlier efforts in the way of price agreements proved ineffectual, and made necessary the establishment of stronger combinations. Strong cartels thus established in various steel products proved defective also, because they lacked control over the export trade, as well as a comprehensive oversight of the market. The Steel Syndicate was formed, therefore, with the intention of bringing about a harmonious action in all lines of steel production. The first step was to secure an effective combination of the heavy rolled products (half-products, rails, and structural steel), and these products could be more easily brought into a combination because they were made to a great extent by a limited number of large mixed works, which had a certain economic likeness. The next step was to bring about a cartel for the light rolled products. This, however, had not gone beyond a determination of quotas, and awaited an agreement with the outside straight rolling mills and the Siemens-Martin (open hearth) steel mills before it could be firmly established.<sup>1</sup>

The project for the Steel Syndicate was first broached in a practical sense in the autumn of 1902. The chief spirit in the movement was Adolf Kirdorf, the head of the Half-products Syndicate. After preliminary preparations a meeting was held in February, 1903, which chose a commission to work up a plan. This plan came up for acceptance in the autumn of the same year. There were the usual protracted negotiations, but finally all of those works whose adhesion was regarded as vital were secured

<sup>1</sup> *Enquete, S.V., Anlage 5.*

by various compromises and concessions, except Krupp, Phoenix, and Westfaelische Stahlwerke. The agreement was ratified nevertheless on March 1, 1904, and almost immediately after Krupp joined in consideration of an enlarged quota. It was deemed essential, however, that Phoenix should enter the combination, and the newly formed Syndicate applied all its commercial and financial influence, especially with the Coal Syndicate and the banks, to achieve its purpose, treating it as a "scab" concern. The management of Phoenix refused to join because they regarded the quota allotted to them as insufficient. The Syndicate soon succeeded, chiefly through the influence of the great banks, in getting the shareholders of Phoenix to reverse the policy of the management. The vigorous and drastic measures which the Syndicate took to accomplish its purpose excited a good deal of unfavorable criticism, but Phoenix has accepted the situation with a tolerably good grace.<sup>1</sup> As a matter of fact, its profits have shown a large increase.<sup>2</sup>

The Stahlwerksverband went into effect on March 1, 1904. It was concluded for a term ending on June 30, 1907; and, in case there is no written objection to its continuance by any member before December 31, 1906, it is to stand until June 30, 1912. The character of this agreement, in respect to matters of general interest, is substantially as follows:<sup>3</sup>—

The steel-works owners in the combination have an agreement whereby they obligate themselves to sell certain products to their central company, which is called the Stahlwerksverband. They agree further to meet in a general assembly to perform certain duties imposed by the

<sup>1</sup> Cf. *Geschäfts-Bericht Phoenix, 1903-04.*

<sup>2</sup> Liefmann, "*Zur heutigen Lage der deutschen Gross-eisenindustrie*," *Conrad's Jahrbuecher*, November, 1905.

<sup>3</sup> This statement is based on the text of the agreement and a condensed exposition thereof submitted to the government by the Steel Syndicate. Cf. *Enquete, S.V., Anlage 5.*

agreement on that body, and also to submit to the directions of certain organs provided for in the agreement. The Stahlwerksverband, or central company, has, on its part, an agreement with the steel-works owners to purchase all of their products, of the kinds specified, and to sell them again under the terms fixed by the agreement. The Assembly of the Steel-works Owners elects an Advisory Council (*Beirat*), a body called the Commission, and several subordinate commissions. The Stahlwerksverband has the usual statutory organs of a company; namely, Supervisory Council, Managing Directors (*Vorstand*), and General Assembly. In the Assembly of Steel-works Owners each member has one vote for every 10,000 tons quota of production. Some of the chief powers of this body are: (1) election of *Beirat* and Commission, (2) admission of new members, (3) determination of eventual restriction of quotas, (4) assent to sales or leases of plants by owners, (5) determination of penalties, (6) dissolution of agreement in case of reappearance of competition, and (7) provision for the inclusion of light rolled products (B-Products) in syndicate sales. The *Beirat* is composed of members elected by the Steel-works Owners, each owner or group of owners having the right to elect one member for every 500,000 tons of quotas. The members of the *Beirat* must be chosen from the General Assembly. The chief powers of the *Beirat* are (1) holding members of the combination to their agreement, (2) provision of rules regarding selling prices and terms of sale, (3) determination of increase of quotas for B-Products (see below), (4) determination of prices to be paid the Steel-works Owners, (5) disposition of reserves, (6) imposition of penalties, and (7) authorization to *Vorstand* to conclude agreements with competitors, etc. The third organ of the cartell is the Commission, which is composed of eight members, and which has the following powers: (1) classification of commodities, and (2)

determination of "scale prices," comparative weights and compensation for unusual specifications. Among the subordinate commissions the freight commission may be specially mentioned.

The selling company is called the "Stahlwerksverband, Aktiengesellschaft." It is located in Düsseldorf. The purpose of the company, as described in the by-laws, includes not only the purchase and sale of iron and steel products of all kinds, but also the acquisition and operation of all kinds of enterprises which are connected with the storage and transportation of iron and steel products. This company has a share capital of 400,000 marks in registered shares, which are not transferable without the consent of the General Assembly. This capital is nominal in amount, because the company, although it does an enormous business,<sup>1</sup> is, in effect, only an agent of the Steel-works Owners, and sells for cash. The Managing Directors, or the *Vorstand*, conduct the business of the company, which has a very large and highly organized bureau. There is one department for accounting, statistics, taxation, freights, legal work, and for dealing with the public authorities, and a department for the sale of each of the three kinds of heavy rolled products.

The commodities covered by the agreement are specifically described. They include (1) the production of crude steel and forge iron; (2) the purchases of the same, and also of rolled half-products and products enumerated under the two following specifications; (3) the production of half-products, railway material, and structural steel; (4) the production of bars, rods, heavy and light sheets, tubes, railway axles, wheels and tires, forge pieces, cast steel pieces, etc., so far as not made from material under 3 and 4, but directly from crude steel; and (5) the purchase

<sup>1</sup> The sales in the first year, which did not comprise the whole output, were about \$62,000,000. Cf. *Iron and Coal Trades Review*, September 15, 1905.



from Steel-works Owners of commodities enumerated under 3, if they are for the plants of the Steel-works Owners, and if the products thereof are sold by the cartell. The products enumerated under 1 and 3 are called A-Products, and those under 4 are called B-Products. The Stahlwerksverband buys from the Steel-works Owners all the products which are offered for sale under the group A-Products, and sells the same for the general account. For B-Products, on the other hand, the amount of production is fixed, but the sale is left to the Steel-works Owners individually, or to such other cartells as they may belong to.

The quotas of the Steel-works Owners for the A-Products sold by the Stahlwerksverband are based on the amount of crude steel originally allotted to each by the agreement. This is called the principal quota, and is divided into three "group quotas"; namely, (1) crude steel and half-products for direct sale, (2) railway material, and (3) structural steel. The group quotas are given in crude steel equivalents. It is the duty of the selling company to distribute the orders so that each concern shall have its share according to its quotas. There are various particular provisions in this connection. If the total of the quotas is increased, they must all be increased in proportion; but, if any concern is unable to maintain the increased output allotted to it, the works which produce the excess are required to pay those which produce less a contribution of 5 marks per ton. Certain exchanges in quotas between different plants are allowed, with the consent of the Vorstand, and it is also provided that the Vorstand can make arrangements whereby certain works shall receive the bulk of orders for unusual specifications. Both these provisions aim at a greater economy of production by a division of labor. Each Steel-works Owner must fulfil orders allotted him; but, in case they involve changes in his equipment, compensation must be made. Where a concern uses its



own products, the Stahlwerksverband does not intervene as a buyer or seller.

The selling prices are fixed by the Vorstand under the guidance of rules laid down by the Beirat. The Steel-works Owners receive a minimum price ("table price") originally, and afterward what excess remains from the actual proceeds after deduction of the various expenses of administration, reserve, rebates, etc., incurred by the selling company. It is evident that the only way open for any particular concern to increase its profits is to reduce its costs of production. The "table prices" are for Thomas or basic Bessemer steel. Extra prices are allowed for commodities of superior grade, based on the extra proceeds of sale. A particular concern may receive higher prices than others if it is clear that its product commands a higher price in the market on account of quality. Important features of the price regulation are the freight-basing points. In the domestic trade the rules are as follows: for half-products there are five bases, and the purchaser is quoted a price from the base nearest to his works; for railway material the base is the producing concern; for structural steel the base is Diedenhofen. In the foreign trade the basing point is the plant most favorably located for the purchaser. These rules represent partly compromises between different interests in the combination and partly attempts to economize freight charges. For the foreign trade, for example, each concern has the advantage or disadvantage resulting from its geographical situation with regard to the destination. In domestic railway material, on the other hand, geographical situation has no effect. Export bounties which are received from other cartells (*e.g.*, Coal Syndicate or Pig Iron Syndicate) are distributed in such a manner that the Steel-works Owners who make the commodities for which export bounties are received get their share thereof, whether their products are exported or not.

For the B-Products the principal quota is the weight of crude steel required to make them. This is fixed for each concern in the original agreement. A concern can reduce its sale of B-Products at will. On the other hand, it cannot increase its sales without leave from the Beirat. If a concern sells more than its allotted quota, it must pay 20 marks per ton for such excess sales.

The agreement provides for a "reserve," which is intended principally for the promotion of the export trade or for fighting competitors. It is acquired by deductions made from the proceeds of sale on the basis of the "table prices." This assessment is fixed by the Assembly of Steel-works Owners, with the limitation that it cannot exceed 3 per cent. of the sums paid under the "table price" payments. The Steel-works Owners are prohibited from selling or leasing their plants without the consent of the Assembly of Steel-works Owners, but this assent must be given if proper guarantees are provided for the fulfilment of cartell obligations. On the other hand, the Steel-works Owners are forbidden to buy or operate any outside plant that makes A- or B-Products or to erect new plants for the production of those commodities. The Vorstand has the right to supervise all concerns, and to inspect plants, books, and papers, in order to insure due performance of obligations. Detailed provisions are made regarding fines and penalties. An arbitration court is established also, which (to the exclusion of the courts of law) has jurisdiction over disputes concerning the obligations of the parties to the agreement. In case new competition appears during the term of the cartell with a production amounting to 5 per cent. of the cartell in A- or B-Products, according to the opinion of the Beirat, the agreement may be cancelled.

The original quotas of the members of the Stahlwerksverband for different products are shown in the following table:—



In addition to the quotas given above, certain concerns have the privilege of purchasing a fixed amount of steel. The only important allowance is that of Phoenix, which amounts to 100,000 tons. Besides this certain other works are to receive in the future certain additions to their quotas. Here, again, there is only one case in which a considerable increase is provided for; namely, Krupp, which by April, 1907, will be allowed 706,000 tons for its total quota.<sup>1</sup> Taking the total quotas, the geographical distribution is as follows: for the Rhenish-Westphalian works, 54 per cent.; for the works in the Saar, Lorraine, and Luxemburg, 32 per cent.; for Upper Silesia, 7 per cent.; and the remainder (7 per cent.) in various parts of Germany.<sup>2</sup>

The proportion of the production of the Stahlwerksverband to the total production of Germany is estimated at about 90 per cent.<sup>3</sup> All the important steel works which were deemed to come within the scheme of organization except one—the Westfälische Stahlwerke—are included in the agreement. Several works have been added since then. There does not seem to be any immediate likelihood of new competition appearing. To start a new first-class steel works with an independent supply of coal and coke would cost, it is said, fifty million marks.<sup>4</sup> Voelcker says, "The German Stahlwerksverband represents for the cartells in the iron industry, not the keystone of the arch, but rather the foundation of a new grouping."<sup>5</sup> The chief purposes of the cartell are officially stated to be (1) the maintenance of the domestic market, (2) the full occupation of the works, (3) the simplification of working programmes

<sup>1</sup> *Jahrb. f. d. O. Dortmund*, 1901, -04, pp. 720, 721.

<sup>2</sup> *Ibid.*, p. 722.

<sup>3</sup> Voelcker, "L'État actuel de l'industrie sidérurgique allemande et sa organisation," *Revue économique internationale*, Décembre, 1904, p. 742.

<sup>4</sup> *Enquete, S.V.*, p. 16.

<sup>5</sup> Voelcker, *Revue écon.*, Décembre, 1904, p. 744.

of the works, and (4) the elimination of competition among German works in foreign markets.<sup>1</sup> Adolf Kirdorf was elected as the first head of the Syndicate.<sup>2</sup>

It is difficult to estimate the capital value of the concerns in the Steel Syndicate. They include, of course, besides steel mills, coal mines, coke works, blast furnaces, etc. If the share capital at the market quotation is taken, and to this is added the outstanding funded debt, a fairly representative figure is obtained. On this basis, using figures chiefly for 1904, the following computation has been made from data in the *Dortmunder Jahrbuch* and *Saling's Boersenpapiere*. For twenty concerns in the Syndicate, embracing 63 per cent. of the total quotas for A- and B-Products, the total capital value is computed to be about 958.27 million marks. If the same proportion be applied to the aggregate quotas of the syndicated concerns, the total capital value would amount to 1,521 million marks, or about \$362,000,000.<sup>3</sup>

The Steel Syndicate aimed at a national organization of the industry, and several concerns in Upper Silesia were included in the combination. The steel producers of that region, however, went further, and established a local organization, which in some respects was more complete than the Steel Syndicate. The distance of Upper Silesia from accessible markets makes it necessary for the steel works to manufacture the finer products which pay better for distant shipment. The German Rolling Mill Cartell, which was dissolved in the early nineties, left behind it in Silesia a local cartell which included all but one concern, and this organization lasted down to the end of 1904. It was, however, inadequate, and hence some of the Silesian works joined the Steel Syndicate. This led to the or-

<sup>1</sup> *Enquete, S.V.*, p. 37.

<sup>2</sup> *Stahl u. Eisen*, 1904, p. 331.

<sup>3</sup> Jutsi, taking the par value of the capital stock, the reserves, and the bonded debts, estimates the total capital invested at 1031.5 to 1041.5 million marks. *Die deutsche Montanindustrie auf dem Wege zum Trust*, Jena, 1905, p. 31.

ganization of a local steel combination<sup>1</sup> on December 16, 1904, which went into effect at the beginning of 1905. This was called the Oberschlesische Stahlwerksverband G. m. b. H.<sup>2</sup> It includes the eight steel works of Upper Silesia, one in Berlin, and one in Danzig. The term of the agreement is fixed from January 1, 1905, to June 30, 1907, although an earlier dissolution was possible under certain contingencies. The agreement in its general form is modelled on that of the greater Steel Syndicate, but it differs in one very important particular. As there is little of crude steel or heavy rolled products made for sale, these are not syndicated, but the light rolled products are cartelled instead. Some of these light rolled products are sold by the syndicate, but the others are simply regulated as to output.<sup>3</sup> There were some difficulties in the beginning which threatened to break it up, but these were settled,<sup>4</sup> and soon after the five remaining steel works in Upper Silesia became members of the larger or "German" Steel Syndicate.<sup>5</sup>

One of the characteristic developments of industrial combinations has been the suppression of the middlemen. The Steel Syndicate furnishes some striking illustrations of this fact. Before the formation of the syndicate the dealers in structural steel had been organized in five groups by the Beam Syndicate and,<sup>6</sup> these groups were recognized by the Steel Syndicate after it was established. The members of these groups of dealers agree to sell according to certain minimum prices and conditions, and each group has a distinct territory. Similar organizations have been

<sup>1</sup> Cf. *Enquete, S. V.*, Anlage 4.

<sup>2</sup> G. m. b. H. is the abbreviation for "company with limited liability."

<sup>3</sup> *Enquete, S. V.*, Anlage 2; *Deutsche Industrie-Zeitung*, December 30, 1904, p. 475.

<sup>4</sup> Cf. *Kartell-Rundschau*, 1905 pp. 270, 374, 428.

<sup>5</sup> *Ibid.*, p. 490.

<sup>6</sup> *Deutsche Industrie-Zeitung*, January 22, 1904, p. 34.

formed in Switzerland, Denmark, Sweden, and Norway.<sup>1</sup> The Steel Syndicate declares that its special purpose in promoting and recognizing them has been to obtain a better view of the market, and to exercise a greater control over it.<sup>2</sup> The dealers have submitted to the inevitable with what grace they could, but they complain that the profit (a commission practically) is too small.<sup>3</sup> For the other products, which the syndicate sells directly,—namely, half-products and railway material,—the conditions of trade are different; *i.e.*, they are both sold direct to the consumers in the domestic market, and also to some extent abroad. In the most important foreign market of the syndicate,—namely, London—the former agents of the various companies have been organized into a limited liability company over which the syndicate has taken pains to secure complete control, both of *personnel* and stockholders.<sup>4</sup> Similar agencies have been established to represent the syndicate in Amsterdam and at Brussels. Further, in order to get a better view of the English market, the syndicate has stopped selling *f. o. b.*<sup>5</sup> Continental ports, and sells instead *c. i. f.* English ports.<sup>6</sup> The syndicate has even introduced sales with delivery at works to the English consumer.<sup>7</sup>

It would be difficult to appreciate properly the policy of the Steel Syndicate, especially on account of the brief term of its existence, without some reference to the previous movement of production and prices. Before speaking, however, of any particular feature, it is desirable to note a few of the leading facts regarding the steel market

<sup>1</sup> *Enquete, S.V., Anlage 5, p. 44; Deutsche Industrie-Zeitung, June 17, 1904, pp. 226, 227.*

<sup>2</sup> *Enquete, S.V., Anlage 5, p. 44.*

<sup>3</sup> *Ibid.*, p. 22.

<sup>4</sup> *Deutsche Industrie-Zeitung, May 27, 1904, p. 198; Kartell-Rundschau, 1904, p. 532.*

<sup>5</sup> "Free on board" at port of shipment.

<sup>6</sup> "Cost, insurance, and freight"; *i.e.*, price delivered at port of destination.

<sup>7</sup> *Enquete, S.V., Anlage 5, p. 43.*

in recent years. The period since 1895 may be approximately described as follows: From 1895 to 1900 there was a great boom, which culminated in a short period of high prices in 1899-1900, and terminated in a crisis in the latter year, which brought on a general and very serious collapse. A period of depression followed, which may be said to cover the years 1901 to 1902.<sup>1</sup> During 1903 improvement was evident, and since then the steel trade has been active, if not, generally speaking, remarkably profitable. The last half of 1905 has brought an extraordinary revival of activity.

The raw material cartells had established themselves at the beginning of the period, and occupied a favorable position throughout. The cartells which existed in finished products were generally more loosely formed, and their policy both in production and prices was less conservative. When the depression came, they were in a weak position, and were more eager to form combinations. The raw material cartells had, however, the advantage, and succeeded in shifting the greater part of the losses occasioned by the hard times on to the manufacturing branches. The former were able, that is, to maintain their prices to a large extent, while the latter had to reduce theirs, and to accept greatly diminished margins. The general policy of all producers was to keep up their production, and to sell abroad at any cost what they could not find a market for at home. The following table shows the movement of production in some leading lines:—

<sup>1</sup> Cf. Walker, pp. 59-77.



PRODUCTION OF PIG IRON AND CERTAIN IRON MANUFACTURES IN THE GERMAN CUSTOMS UNION, 1895-1904.  
[IN THOUSANDS OF TONS: THUS 5,465 = 5,465,000 TONS.]

Year.	(1) Pig Iron.	(2) Cast-iron Wares, Second Cast- ing. <sup>1</sup>	(3) Half-products (from Converter or Siemens-Mar- tin) for Sale.	(4) Rails.	(5) Finished Prod- ucts (from Con- verter or Si- emens-Mar- tin).	(6) Wire Rods (from Converter or Siemens-Mar- tin).	(7) Tin Plate.
1895	5,465	1,146	1,132	495	2,830	502	31
1896	6,373	1,355	1,358	583	3,462	549	34
1897	6,373	1,430	1,358	799	3,863	513	31
1898	7,313	1,478	1,478	819	4,338	476	35
1899	8,143	1,573	1,508	808	4,830	513	34
1900	8,521	1,768 <sup>2</sup>	1,536	922	4,757	487	31
1901	7,880	1,785	1,648	849	4,486	523	36
1902	7,553	1,503	1,648	945	5,101	574	42
1903	10,538	1,506	2,230	1,080	5,102 <sup>4</sup>	—	45
1904	10,588	1,744	2,374 <sup>3</sup>	—	5,976	—	48

Columns (1), (2), (5), *Jahrb. f. d. O. Dortmund* 1901-04, p. 728. Columns (3), (4), *Esquète, S. V., Anlage 7*. Column (6), *Esquète, VIII., p. 717*. Column (7), *Esquète, IX., p. 161*.

<sup>1</sup> Excluding trifling production in Luxemburg, except in 1904.

<sup>2</sup> *Jahrb. f. d. O. Dortmund*, 1901-04, p. 728.

<sup>4</sup> Excluding 135,099 tons in Luxemburg.

<sup>3</sup> Obvious error in original corrected.

An inspection of this table shows a great increase between 1895 and 1900 for all the products given, except rods and tin plate. The decrease in production in 1901 is equally general, with a slight recovery in 1902. With 1903 production quite generally forged ahead of previous figures, and has continued to increase since. The steadiness with which production has increased in Germany is remarkable. Voelcker states that the normal increase in the demand for steel in Germany is about 420,000 tons per annum.<sup>1</sup> The pig iron production in Germany during the nine years ending 1904 increased at an average rate of 510,000 tons per annum. The production of pig iron in 1904 showed practically no increase over 1903, while half-products declined slightly.

The production policy of the Steel Syndicate during the period of two years since its establishment has not been characterized by any extraordinary features. The syndicate has published the statistics of production only for A-Products. The shipments of these products (reckoned in crude steel weight) were as follows:—

March 1, 1904, to February 28, 1905 (12 mos.)	4,533,805 tons, A-Products
March 1, 1905, to December 31, 1905 (10 mos.)	4,517,512 " "

The production of the first business year was about 1.4 per cent. less than the quotas prevailing for that period. The production for the first *eight* months of the second business year, however, was about 9.9 per cent. greater than the prevailing quotas for that period.<sup>2</sup> For the chief subdivisions of A-Products the shipments, reckoned in crude steel weights, were as follows:<sup>3</sup>—

<sup>1</sup> Voelcker, *Revue écon.*, Décembre, 1904, p. 732.

<sup>2</sup> Cf. *Enquete, S.V.*, Anlage 5; *Glückauf*, 1906, p. 82; *Stahl u. Eisen*, 1905, p. 1385.

<sup>3</sup> Cf. *Enquete, S.V.*, Anlage 5; *Glückauf*, 1906, p. 82.

<i>Period.</i>	<i>Half-products.</i>	<i>Railway Material.</i>	<i>Structural Steel.</i>
March 1, 1904, to February 28, 1905 (12 mos.) .	1,599,598 tons	1,394,623 tons	1,529,435 tons
March 1, 1905, to December 31, 1905 (10 mos.) .	1,661,649 "	1,399,960 "	1,455,903 "

Comparing the same periods, the shipments during the first ten months in the second year exceeded the shipments during the first ten months of the first year as follows: for all A-Products by 18 per cent., for half-products by 23 per cent., for railway material by 20.4 per cent., and for structural steel by 11 per cent. The production policy of the syndicate as indicated by these figures shows a decided tendency towards expansion. It is instructive to compare the policy of the Steel Syndicate with the Half-products Syndicate which preceded it. The following figures for half-products are in *finished weights*:<sup>1</sup>—

<i>Period.</i>	<i>Sales of Half-products, Finished Weights.</i>
March 1, 1902, to February 28, 1903 . . . . .	1,460,637
March 1, 1903, to February 28, 1904 . . . . .	1,449,698
March 1, 1904, to February 28, 1905 . . . . .	1,411,903

The sales in 1904-05, under the régime of the Steel Syndicate, were less than those of the Half-products Syndicate. This reduction came out of the export trade, and not out of the domestic supply, as is shown by the following table of domestic sales:<sup>2</sup>—

<i>Period.</i>	<i>Domestic Sale, Half-products, Finished Weights.</i>
1902-03	737,621 tons
1903-04	844,629 "
1904-05	1,018,277 "

The data regarding the movement of B-Products are very meagre. The syndicate does not generally give out these figures. Kollmann, however, gives a statement of

<sup>1</sup> *Enquete, S.V., Anlage 5.*

<sup>2</sup> *Ibid.*

the shipments of B-Products during the first year of operation, together with the quotas, as follows:<sup>1</sup>—

<i>B-Products.</i>	<i>Shipments.</i>	<i>Quotas.</i>
Bars . . . . .	1,718,211 tons	1,847,622 tons
Rods . . . . .	371,713 "	434,230 "
Sheets . . . . .	682,889 "	714,927 "
Axles . . . . .	306,599 "	351,546 "
Tubes . . . . .	48,226 "	53,400 "

At the end of March, 1905, the syndicate voted to increase the quotas for bars and sheets by 5 per cent. This increase became permanent on July 1, 1905.<sup>2</sup> The total allotment for A-Products on July 1, 1905, was 4,864,485 tons, as compared with 4,614,225 tons shortly after the formation of the combination. The addition of five more concerns in Upper Silesia increased the total to 4,900,000 tons.<sup>3</sup> In January, 1906, the quotas for bars and sheets were increased again by 5 per cent., while the quotas for rods were increased 10 per cent. The total increase of quotas over the original quotas are as follows: bars and rods, 10 per cent.; sheets, 15 per cent.<sup>4</sup>

The movement of prices in the steel trade has been affected in an important degree by the existence of cartells for the various products, but their influence on prices has been very unequal, and none of them ever had complete mastery of the situation. The following table shows the general course of development for the chief raw materials and the chief manufactured products during recent years:—

<sup>1</sup> Kollmann, p. 12.

<sup>2</sup> *Ibid.*, p. 31; cf. *Kartell-Rundschau*, 1905, pp. 193, 194, 367-372.

<sup>3</sup> *Iron and Coal Trades Review*, December 15, 1905, p. 2022.

<sup>4</sup> *Deutsche Industrie-Zeitung*, January 26, 1906, p. 45.

PRICES OF IRON, IRON PRODUCTS, AND RAW MATERIALS.  
(In Marks.)

Year.	(1) Minette Iron Ore.		(2) Blasé Furnace Coke.		(3) "Fett" Coal Mine-run.		(4) Thomas Pig Iron (Westphalia).		(5) Mill Iron (Silesia).		(6) Thomas Ingots Crude.		(7) Thomas Billets.		(8) Rails.	
	Jan. per ton.	Aver. per ton.	Jan. per ton.	Aver. per ton.	Jan. per ton.	Aver. per ton.	Jan. per ton.	Aver. per ton.	Jan. per ton.	Aver. per ton.	Jan. per ton.	Aver. per ton.	Jan. per ton.	Aver. per ton.	Jan. per ton.	Aver. per ton.
1895 . .	3.30	11.00	8.00	45.83	8.00	57.5	72	75	—	—	—	—	—	—	—	—
1896 . .	3.40	13.82	8.25	56.50	8.25	61.7	81	84	—	—	—	—	—	—	—	—
1897 . .	3.40	13.82	8.25	56.50	8.25	61.7	81	84	—	—	—	—	—	—	—	—
1898 . .	3.55	14.37	9.08	60.00	9.08	76.7	83	83	—	—	—	—	—	—	—	—
1899 . .	3.55	14.37	9.37	70.25	9.37	76.7	87	105	—	—	—	—	—	—	—	—
1900 . .	3.90	21.29	10.25	91.20 to	10.25	90.7	117	125	—	—	—	—	—	—	—	—
1901 . .	4.40	22.00	10.25	71.50	10.25	86.5	97	78	—	—	—	—	—	—	—	—
1902 . .	2.85	15.00	9.40	85.83	9.40	60.8	75	82.50	—	—	—	—	—	—	—	—
1903 . .	—	—	9.38	57.13	9.38	60.8	77.50	77.50	—	—	—	—	—	—	—	—
1904 . .	—	—	9.38	57.80	9.38	—	77.50	77.50	—	—	—	—	—	—	—	—

Year.	(9) Beams.		(10) Bars.		(11) Rods.		(12) Boiler Plate.		(13) Light Sheets.		(14) Tin Plate.	
	Jan. per ton.	Aver. per ton.	Jan. per ton.	Aver. per ton.	Jan. per ton.	Aver. per ton.	Jan. per ton.	Aver. per ton.	Jan. per ton.	Aver. per ton.	Jan. per ton.	Aver. per ton.
1895 . .	—	—	95	95	93	93	152.50	152.50	121.67 to	121.67 to	292.3	292.3
1896 . .	90	98	105	120	107	112.50	171.66	142.08 to	142.08 to	301.2	301.2	301.2
1897 . .	103	105	130	130	122.50	112.50	179.79	146.25 to	146.25 to	292.9	292.9	292.9
1898 . .	108	108	117.50	120	123	123	186.25	153.71 to	153.71 to	289.2	289.2	289.2
1899 . .	108	120	132.50	120	125	125	195.00	127.10	127.10	329.4	329.4	329.4
1900 . .	130	140	185	190	185	185	210.42	187.50	187.50	398.0	398.0	398.0
1901 . .	120	112.50	180	105	150	135	180.00	190.00	190.00	340.6	340.6	340.6
1902 . .	105	105	105	110	120	120	183.33	183.33	183.33	333.9	333.9	333.9
1903 . .	105	105	105	110	120	120	150.00	150.00	150.00	—	—	—
1904 . .	105	105	—	—	112.50	112.50	151.00	151.00	125.00	125.00	—	—

Column (1), Bosselmann, pp. 37, 38, 42. Columns (2), (3), (4), (12), (13), *Fahrbuch f. d. O. Dortmund*, 1901-04, pp. 696, 733 (iron prices in 1901 nominal). Column (5), Kuh, p. 222. Columns (6), (7), (8), (9), *Enquete, S.V., Anlage 7* (rails, domestic prices at Düsseldorf). Column (10), Voelcker, *Bericht*, pp. 130, 131. Column (11), *Enquete*, VIII., pp. 742-747. Column (14), *Enquete*, IX., p. 182.

This table does not present, of course, the details of price movements, and, in general, it does not show the extremes. For example, pig iron was quoted as low as 45 m. in 1901.<sup>1</sup> In Silesia sheets were from 205 to 215 m. at the beginning of 1900, and from 125 to 135 m. at the end of the year.<sup>2</sup> To a very considerable extent, also, rebates were granted on the prices quoted, and even on the material previously sold. Most of the coke was sold for 1900 and 1901 on two-year contracts at 17 m.; and, though the market quotations ran higher, very little was bought on that basis.

An inspection of the price table shows that there was a general advance in prices from 1895 to 1900. The crisis developed in the middle of the latter year. The advances appear quite as early for the manufactured products as for the raw materials, and, on the whole, it may be safely asserted that they were the result of general economic influences, and that there was no causal relation between them. Dr. Voelcker, in his impartial and judicious summary of the situation, declares that from 1895 to 1898 the cartells followed a moderate price policy, but that from 1899 to 1901 the reverse in general was true.<sup>3</sup> The uncartelled lines got high prices in 1899 and 1900, owing to the favorable market, and the cartelled lines were unable to resist the temptation to put up their prices to an immoderate height also. The fall in prices, after the depression set in, was relatively greater for the manufactured products than for raw materials or half-products, and it came sooner. This was partly due to the fact that the raw material cartells took advantage of their strong po-

<sup>1</sup> Cf. *J.-B. d. Handelskammer Oppeln*, 1901, p. 30; Wieser, "Die rheinisch-westfälische Eisenindustrie in der gegenwärtigen Krise," *Jahrb. f. Gesetz. Verwalt. u. Volksw.*, Jahrg. 1902, p. 304.

<sup>2</sup> *J.-B. d. Handelskammer Oppeln*, 1900, p. 29.

<sup>3</sup> Voelcker, *Bericht*, p. 23. Cf. Vogelstein, *S. d. V. f. S.-P.*, p. 86. Dr. Voelcker at that time was in the government service, but since then he has become a director of the Steel Syndicate.

sition to make their customers take their supplies on long-term contracts; but the latter were also to blame, as they were over-anxious to get supplies, not suspecting that a crisis was imminent.<sup>1</sup> The two chief offenders were the Coke Syndicate and the Pig Iron Syndicate.<sup>2</sup> The Steel Syndicate, at the beginning of its operations, established a scale of domestic prices for certain standard products of basic steel. The most important prices were as follows:<sup>3</sup>—

Crude ingots . . . . .	77.50 m. per ton
Rolled ingots (blooms) . . . . .	82.50
Billets . . . . .	90.00
Sheet bars . . . . .	92.50
Structural iron . . . . .	105.00–108.00
Rails . . . . .	112.00
Ties . . . . .	105.00

These prices prevailed without essential modification until November, 1905. A comparison of these prices with those of the years immediately preceding (1902 and 1903) and the years before the boom acquired much headway (*e.g.*, 1896 and 1897) tends to show that the price policy of the Syndicate has been moderate. English reports announce, however, a general 5 shilling advance for half-products of the Steel Syndicate in November, 1905, and predict a further rise.<sup>4</sup> These prices look rather high. The price policy of the syndicate, as far as the domestic market is concerned, was enunciated by one of its directors, Dr. Voelker, as follows: "We do not intend to allow our prices to change continually with the fluctuations of the market. We do not desire, namely, to raise our prices suddenly and rapidly, if the conditions are very favorable; we do not wish, on the other hand, to reduce our prices

<sup>1</sup> Voelker, *Bericht*, p. 255.

<sup>2</sup> Cf. Calwer, *Handel u Wandel*, 1901, pp. 31, 32; Voelker, *Bericht*, pp. 38–45.

<sup>3</sup> *Enquete, S.V.*, Anlagen 3, 5, u. 7. Cf. Kollmann, p. 26. Kollmann gives the price of rails at 118 m.

<sup>4</sup> *Iron and Coal Trades Review*, November 17, 1905, p. 1687.

in bad times, with a declining demand; we desire to keep the middle course."<sup>1</sup>

The syndicate does not fix the prices of light rolled products. The price movement for some of the principal lines is shown in the following table:—

PRICES OF LIGHT ROLLED PRODUCTS.<sup>2</sup>

(In Marks.)

Date.	Bar Steel (Converter).	Hoops.	Boiler Plate (Converter).	Light Sheets (Converter).	Rods (Converter).
<b>1904.</b>					
January 1 . .	107-110	12.250-127.50	150	115	112.50-117.50
April 1 . . .	112	125-130	155	115	112.50-117.50
July 1 . . .	112-115	122.50-127.50	150	115	120
October 1 . .	110-112	122.50-127.50	150	115	112.50-117.50
<b>1905.</b>					
January 1 . .	106-108	122.50-127.50	150-155	115	112.50-117.50
April 1 . . .	110-115	125	150-155	120-122.50	125
July 1 . . .	110	123-125	—	115-120	125
October 1 . .	110-112	125-127.50	130	112-120	125
December 1 .	112-115	125-127.50	130-135	122.50-125	127.50
<b>1906.</b>					
January 1 . .	115-118	130-132.50	130-135	126-130	132.50

A distinct upward movement is observable in the last half of 1905, to which boiler plate forms an exception. This corresponded to an increase in consumption, especially in the domestic market<sup>3</sup>. Comparing these prices with those of preceding years, the prices of bar steel were unduly low; and the same is true also for light sheets and for rods in 1904. In 1905 the prices of light sheets moved erratically, and were, on the whole, too low, while the prices of rods advanced to a reasonably good basis. The position of steel bars became tolerably good only at the beginning of the year 1906.

The burning question of the steel trade since the crisis has been the position of the straight rolling mills (*reine Walzwerke*) with reference to the mixed steel works (*gemischten Werke*). The latter are the great

<sup>1</sup> *Enquete, S.V.*, p. 3.<sup>2</sup> *Glückauf*.<sup>3</sup> *Stahl u. Eisen*, 1905, p. 1216.



works which generally have their own raw materials, and combine the manufacture of heavy and light steel products. Though for a time in the seventies and eighties this integration in industry fell into some disfavor,<sup>1</sup> it is accepted to-day in Germany, as elsewhere, as the necessary basis for large and successful operations. Of the 31 original members of the Steel Syndicate, 17 produce coal, 25 iron ore, and 27 pig iron.<sup>2</sup> These large steel works produce also the bulk of the light rolled products. For example, they produce about three-fourths of the bar steel of Germany.<sup>3</sup> Probably the straight rolling mills do not produce over one-seventh. The straight rolling mills are almost entirely dependent on the large steel works for their material, and they are at a disadvantage both in the manufacture and sale of light rolled products. The superiority of the steel works is based on (1) technical superiority, (2) economy in general expenses, and (3) economy in freights. Their technical superiority relates almost entirely to standard commodities, produced in great quantities, and is found chiefly in the economy of fuel and in the economy of construction and operation of plant. Considering these economies only so far as they relate to the rolling of the light products, the straight rolling mills concede that the large works have an advantage of from 4 to 6 marks per ton in rolling crude steel.<sup>4</sup> It is principally a question of saving heat by direct rolling. It is also obvious that the construction of a plant for a continuous and uninterrupted process is more economical. This factor, as well as that of saving in general expenses, which is equally obvious, is difficult to estimate. The saving in freight is estimated to average  $1\frac{1}{2}$  marks per ton.<sup>5</sup> Not

<sup>1</sup> Cf. Bosselmann, p. 54; Stillech, *Eisen- und Stahlindustrie*, Berlin, 1904, pp. 40, 160, 162; Heymann, pp. 145-148; *Eisen-Enquete-Kommission*, 1878, p. 4.

<sup>2</sup> *Enquete, S.V.*, Anlage 4.

<sup>3</sup> *Kartell-Rundschau*, 1905, pp. 369, 490-492.

<sup>4</sup> *Enquete, S.V.*, Anlage 3.

<sup>5</sup> Cf. *Ibid.*, p. 12, Anlage 3.

all the large steel works enjoy these advantages, as they have not all been rationally located and constructed. The commercial advantage of the mixed work rests partly on their commercial and financial preponderance, and partly on their influence over prices and production.

The complaints of the straight rolling mills may be concisely formulated as follows: that the prices of half-products are too high in comparison with the prices of light rolled products; that the steel works, although they control the export, have been dumping half-products; that the export of prices are excessively low; and that the export bounties are insufficient to enable the straight rolling mills to compete with foreign mills using German half-products.<sup>1</sup> Regarding the price policy in the domestic markets, extensive comparisons might be made; but it is sufficient to cite that of Springmann, a leader of the straight rolling mill group, who divides the decade 1895 to 1905 into two five-year periods,—a period of prosperity and a period of depression. The margin between crude ingots and bar steel in the first period was 49.75 m., and in the second 29.54 m. He compares these with the margins between crude ingots and beams, which for the same periods were, respectively, 21.15 m. and 26.60 m., and he claims that the steadiness of the latter was due to the fact that the steel works combinations controlled the prices of beams. A representative of the steel works claimed, on the other hand, that the margins for beams were reasonable, as well as the margin for bars during the second period, but that the margins for bars had been too high in the first period.<sup>2</sup> On a previous occasion Springmann claimed that a margin of 37.50 m. was necessary between rolled ingots (blooms) and bar steel, while A. Kirdorf

<sup>1</sup> Cf. *Denkschrift zur Lage der Halbzeug kaufenden Walzwerke im letzten Vierteljahre 1904: Enquete, S.V.*, Anlage 3.

<sup>2</sup> *Enquete, S.V.*, p. 23.

(head of the Half-products Syndicate) asserted that 22.50 m. was sufficient.<sup>1</sup> The truth here probably lies near the mean. The rolling mills seem to make a better *prima facie* case in the margins for rods. They cite the cost of rolling rods as given by the Half-products Syndicate as 21 m. The price of billets was 90 m., which, together with 21 m. for rolling and 1.50 m. for freight, makes a total of 112.50 m. The prevailing price for rods, including domestic and export trade and deducting bounties, was 108.21 m. from January to March, 1904, and 107.71 m. from April to June, 1904. They were compelled, therefore, to sell at 4.29 m. and 4.79 m., respectively, below a fair cost of production.<sup>2</sup> The representatives of the straight rolling mills claimed that the steel works made exorbitant profits on half-products;<sup>3</sup> but A. Kirdorf denied it, and offered to prove it from the books of his company. He said that there were great differences in cost, and that the steel works that produced at a disadvantage had as good a claim to have prices adjusted to make their business profitable as the straight rolling mills.<sup>4</sup>

This conflict of interest has not appeared in Silesia, which is due partly to technical conditions and partly to the organization of the industry. A sliding scale has been established between rolled products and pig iron which automatically adjusts the margin.<sup>5</sup>

The Steel Syndicate is incomplete in two important points: (1) the open hearth mills are not in the combination, (2) the B-Products are not syndicated. The bar steel production from the open hearth furnaces is said to be 10 per cent. of the total.<sup>6</sup> The Steel Syndicate has made strenuous efforts to bring them in, but without success. It is said that they demand exorbitant quotas.<sup>7</sup>

<sup>1</sup> Cf. *Enquete*, VI., p. 410.

<sup>2</sup> *Ibid.*, pp. 403, 511, 512.

<sup>3</sup> Cf. Heymann, p. 313.

<sup>4</sup> *Ibid.*, S., V., Anlage 3.

<sup>5</sup> *Ibid.*, VI., pp. 396, 409, 418.

<sup>6</sup> *Tageblatt*, August 17, 1905.

<sup>7</sup> Cf. *Deutsche Industrie-Zeitung*, March 17, 1905; *Kartell-Rundschau*, 1905, p. 144.

It has also been active in trying to bring about some *modus vivendi* for the straight rolling mills, which can hardly be brought into the syndicate before the open hearth furnaces. Various schemes have been proposed. Under their present disadvantageous position they have a relatively depreciated value. If they were admitted into the syndicate with reasonable quotas, they would unquestionably be coveted by the large mills, but it is difficult to see how the syndicate works could be induced to give away valuable privileges without a consideration. The straight rolling mills have proposed a sliding scale, but the proposed margins are high.<sup>1</sup> Finally, the syndicate has made a counter-proposal that the straight rolling mills buy half-products at ruling prices, and sell the rolled products to the syndicate with a fair allowance for the cost of rolling.<sup>2</sup> The syndicate wished to get control of the sale. The syndicate has made some effort to help bring about a separate cartell in bar steel, but the game of cartell politics is complicated, and there were some reasons for going slowly; e.g., securing first the adhesion of the other Silesian mills and the open hearth furnaces.<sup>3</sup> The straight rolling mills, according to admissions from their own side, have been quite immoderate in their demands.<sup>4</sup> Accusations have not been wanting, however, that the Syndicate is really aiming to destroy the straight rolling mills, and to get control of the finished products,<sup>5</sup> though this is emphatically denied.<sup>6</sup>

The complaints of the straight rolling mills regarding the export policy of the Steel Syndicate concerns a matter of much greater interest to German industry and the world at large. The imports of steel are of minor consequence,

<sup>1</sup> *Enquete, S.V.*, Anlage 8.

<sup>2</sup> *Kartell-Rundschau*, 1905, pp. 490-492.

<sup>3</sup> Cf. *Ibid.*, p. 427; *Enquete, S.V.*, p. 26.

<sup>4</sup> Cf. *Enquete, S.V.*, p. 26.

<sup>5</sup> *Deutsche Metall-Industrie-Zeitung*, January 7, 1905.

<sup>6</sup> *Enquete, S.V.*, p. 3 (Voelcker).

although in the boom period, especially in 1899 and 1900, there was a considerable importation of pig iron and half-products.<sup>1</sup> The exports are shown in the following table:—

## EXPORTS OF THE GERMAN CUSTOMS UNION.

[IN THOUSANDS OF TONS: THUS 272 = 272,000 TONS.]

Year.	Pig Iron. <sup>2</sup>	Half-products. <sup>2</sup>	Finished Products. <sup>2</sup>
1898 . . . . .	272	35	1,312
1899 . . . . .	235	23	1,244
1900 . . . . .	191	34	1,355
1901 . . . . .	304	202	1,815
1902 . . . . .	516	636	2,127
1903 . . . . .	418	638	2,281
1904 . . . . .	226	396	2,022

The domestic demand was so keen in 1899 and 1900 that the exports of pig iron declined. It is remarkable that finished products declined also. With the beginning of the depression in the domestic markets producers were led to increase their exports. This is especially marked for pig iron in 1901 and for half-products in 1902. The exports of finished products do not show such a decided increase. The straight rolling mills complained that the steel works were dumping their production in England, both during the régime of the Half-products Syndicate and since the Steel Syndicate was formed. In answer to this charge the Steel Syndicate submitted the following table for domestic and export sales of half-products (finished weights):<sup>4</sup>—

Year.	Domestic.	Per Cent.	Exports.	Per Cent.
1902-03 .	737,121 tons	50.50	723,016 tons	47.97
1903-04 .	844,629 "	58.26	605,069 "	41.47
1904-05 .	1,018,277 "	72.12	393,626 "	27.88

The sales in 1904-05 were made during the régime of the Steel Syndicate. The question of dumping applies only to half-products, so far as other branches of the steel

<sup>1</sup> *Jahrb. f. d. O. Dortmund*, 1901-04, p. 734.

<sup>2</sup> *Voelcker, Bericht*, p. 29.

<sup>3</sup> *Jahrb. f. d. O. Dortmund*, 1901-04, p. 734.

<sup>4</sup> *Enquete, S.V.*, Anlage 5.

industry are affected, because the other A-Products—namely, rails and beams, etc.—are necessarily sold to the consumers in the countries where they are used. National interest, however, is almost equally opposed to dumping these products. The policy of the Steel Syndicate in the sale of all A-Products for the first year of its activity (1904-05) is shown in the following statement<sup>1</sup> (crude steel weights):—

Commodity.	Domestic.	Per Cent.	Export.	Per Cent.
Half-products . .	1,154,910	72.20	444,688	27.80
Railway Material . .	1,049,454	75.25	345,169	24.75
Structural Iron . .	1,174,147	76.77	355,288	33.23

The Steel Syndicate makes unquestionably a favorable showing. It also points out that, though the export of manufactures of half-products has declined somewhat, the decline has not been so great as the decline of half-products.<sup>2</sup> It is improbable that the straight rolling mills could have so increased their output as to have absorbed all the half-products exported, if they had been given the chance.<sup>3</sup> The straight rolling mills complain particularly of the exports to England. Although the Steel Syndicate could show from the official trade statistics there had been a heavy decline in this particular direction, it was well known that in former years a good deal of the English export was reshipped to America, and so a real decline for the English market was not proven. The best argument of the syndicate was that the German half-products did not constitute more than 3.8 per cent. of the total English consumption.<sup>4</sup>

The complaints against the export policy of the steel works were directed against prices quite as much as quantities. Low export prices have always prevailed in the

<sup>1</sup> *Enquete, S. V., Anlage 5.*

<sup>2</sup> *Ibid.*

<sup>3</sup> *Cf. Ibid., pp. 13, 14, 15, 16.*

<sup>4</sup> *Ibid. Anlagen 3 u. 5.*

German iron and steel trade.<sup>1</sup> The reports of the German steel companies frequently admit it.<sup>2</sup> There is no question that the export prices of half-products have been very low, but various circumstances must be taken into account in estimating the effects. A good deal depends at what point of delivery or sale the prices are compared, and how the freight is reckoned in making comparisons. The rolling mills are apt to compare prices at the producing mills, while the steel works prefer to compare the prices delivered at the respective places of consumption.<sup>3</sup> Where export bounties are allowed, they must of course be counted in. In order to discuss this question satisfactorily, it would be necessary to know what the export prices really were, for what quantities they applied, and what proportions of the products made therefrom went to different markets where they really met German competition. The theoretical considerations are intricate, while the information as to the facts is totally inadequate, so that it is impossible to make a very confident statement about the real effects of the low export prices. Lippert, a representative of the straight rolling mills, quoted export prices at Antwerp, f. o. b., at 68 m. for ingots, 72 m. for billets, and 72.50 m. for sheet bars as compared with domestic prices of 82.50

<sup>1</sup> *Eisen Enquete*, 1878, pp. 13, 44, 56, 72, etc.; *J.-B. Handelskammer*, Breslau, 1892, p. 160; Wieser, p. 318; Martin, p. 183; Raffalovich, *Trusts, Cartels, et Syndicats*, Paris, 1903, p. 21, note, etc.

<sup>2</sup> Cf., e.g., *G-B. Deutsch-Luxemburgische A-G*, 1902-03: "Kaum die Selbstkosten gedeckt werden konnten"; *G-B. Phoenix*, 1901-02: "die Preise äusserst mässig sind, und einen Gewinn ueberhaupt nicht uebrig lassen."

<sup>3</sup> Two calculations may be given for illustration, which were offered at the Enquete concerning the Half-products Syndicate. A. Kirdorf gave the following example. Export price for rolled ingots at works to English mills, 76 m.; freight to seacoast, 3 m.; sea freight, 6 m.; total cost, e. i. f. England, 85 m. Domestic price, delivered, 84 m.; export bounty, 10 m.; total cost, delivered, 74 m. Kirdorf figured for each concern delivered. The German concern which exported its finished product to England still had freight to pay. Springmann made his calculation as follows: Export price for billets, f. o. b. Antwerp, 72 m.; freight from Dortmund (producing works), 5.70 m.; net price at works, 66 m. approx. Domestic price, 90 m.; export bounty, 10 m.; net price at works, 80 m. Springmann figured the price at producing works. *Enquete*, VI., pp. 426, 430.

m., 90 m., and 92.50 respectively.<sup>1</sup> These were emphatically declared by the representatives to be exceptional, if made in fact; and that this was before the present syndicate was established. Schaltenbrand, one of the directors, asserted that the export was necessary, and they had to take what they could get. He admitted that the export prices were a little lower than the domestic prices, but he claimed that, if account were taken of the export bounties and other conditions, the domestic mills received the more favorable terms. He also quoted the real average proceeds from the export trade of the Steel Syndicate for ingots, billets, and sheet bars; but these figures were not printed in the published protocol.<sup>2</sup> Complaints against the steel works have also been made with respect to the prices at which they sold finished products abroad in competition with the domestic consumers of their half-products.<sup>3</sup>

Space does not permit going into further details in regard to this question. It has become chiefly of historical interest in consequence of the recent vigorous *hausse* in the German steel market, which has resulted in the advance of prices all around and brought the export prices, according to market reports, very close to the domestic prices.<sup>4</sup>

In order to equalize the disadvantage at which the German export industry has been placed with respect to manufactured products in consequence of the low export prices of the raw material cartells, export bounties have been paid from time to time by the latter to such of their customers as were engaged in the export trade. This practice extends back to 1891<sup>5</sup> in the iron trade, and perhaps earlier. The significance of the export bounty

<sup>1</sup> *Enquete, S. V.*, p. 17.

<sup>2</sup> *Ibid.*, pp. 10, 18, 20.

<sup>3</sup> *Id.*, pp. 15, 16.

<sup>4</sup> *Cf. Iron and Coal Trades Review*, November 17, 1905, p. 1687.

<sup>5</sup> *Raffalovich*, p. 23.



system naturally became much greater in the period of depression which followed the crisis of 1900, and it was considerably extended. In 1902 it was systematically organized by the establishment of an "Export Accounting Office" (*Abrechnungsstelle für die Ausfuhr*), in which the coal, coke, pig iron, half-products, and beam cartells united to pay export bounties to each other, and to the mills which made and exported the finer products. These bounties were based on a calculation of the amount of raw material consumed in making the finished product.<sup>1</sup> The general principles established for the payment of these bounties were, first, that they were payable only to members of a cartell, and, second, that the raw materials consumed must be supplied exclusively by the cartells paying the bounties.<sup>2</sup> At the beginning of 1904, when the Steel Syndicate commenced operations, the bounties were paid according to the following scale:<sup>3</sup>—

1.50 m.	per ton of coal.
2.50 m.	" " " iron (exclusive coal bounty).
15.00 m.	" " " half-products (inclusive coal and iron bounty).
20.00 m.	" " " structural steel " " " " " "

Except for a slight reduction of the bounty on half-products for a short time these bounties prevailed through 1904 and 1905.<sup>4</sup> At the end of 1905 the Steel Syndicate decided to grant export bounties only to such cartells as syndicated the foreign as well as the domestic sales, but at the same time they made a very important exception to this, as well as their previous rule; namely, they consented to give a bounty of 7 m. per ton for half-products consumed by the producers of steel bars, although there was no cartell at all in this commodity. This bounty was to begin with the second quarter of 1906. The reason for this exception

<sup>1</sup> *Vide* Walker, p. 223.

<sup>2</sup> Wiesner, p. 307; Vogelstein, *S. d. V. f. S.-P.*, pp. 110, 120; *Enquete, S.V.*, p. 431.

<sup>3</sup> *Kartell-Rundschau*, 1904, p. 373; *Enquete, S.V.*, Anlage 3.

<sup>4</sup> *Kartell-Rundschau*, 1904, p. 871; 1905, pp. 145, 318.

was that the establishment of a cartell in bars was deemed practically impossible.<sup>1</sup> If, as has been frequently claimed, there are some influential steel works in the syndicate who have obstructed the formation of a cartell for bars, this measure seems calculated to bring them around somewhat.

In the agreement constituting the Steel Syndicate one of the powers of the Beirat is "the granting of authority to the Vorstand to conclude protective and other agreements." Under this clause the syndicate has made agreements with foreign steel producers, which form a cardinal feature in its policy. Such agreements are by no means an innovation. An international rail pool which existed for a couple of years was dissolved in 1886.<sup>2</sup> In recent years there have been numerous international agreements in the steel trade, as, for example, rails, beams, rods, heavy sheets, wire nails, enamel ware, pig iron, etc.<sup>3</sup> These various cartells include a number of different countries, but particularly Germany's nearest neighbors, France, Belgium, and Austria. The policy of forming international agreements is the logical development of the policy of forming local or domestic agreements, and generally presupposes the latter. In the iron and steel industry combinations of a more or less comprehensive character exist in all the important producing countries, and there is no doubt that the formation of powerful combinations in one country stimulates its rivals to strengthen themselves in a similar manner. To a certain extent, indeed, the formation of the United States Steel Corporation has had an influence in bringing about the formation of the Steel Syndicate in Germany.<sup>4</sup> The establishment of the Steel

<sup>1</sup> *Kartell-Rundschau*, 1905, p. 692.

<sup>2</sup> Cf. *Handelskammer zu Bochum*, 1886, p. 13.

<sup>3</sup> Bosselmann, p. 61; Vogelstein, *S. d. V. f. S.-P.*, p. 121; *Kartell-Rundschau*, 1903, p. 47, 1197; *Deutsche Industrie-Zeitung*, August 7, 1903; *Wibaüt, Trusts en Kartellen*, Amsterdam, 1903.

<sup>4</sup> Cf. *Gemeinfassliche Darstellung des Hüttenwesens*, Düsseldorf, 1903, p. 120.

Syndicate not only gave the German producers a greater power and prestige in foreign markets, but it also made it possible for them to make advantageous agreements with their rivals for the elimination of competition. The Steel Syndicate promptly availed itself of this opportunity.

A very circumstantial account of certain of these transactions was published in the *Revue économique internationale* for December, 1904, signed by "un industriel belge."<sup>1</sup> According to this authority a meeting was held at Aix-la-Chapelle in June, 1904, which resulted in the formation of an international beam pool between Germany, Belgium, and France, with quotas of 73.45 per cent., 15.05 per cent., and 11.05 per cent., respectively. This agreement was signed on November 24, 1904. It is to terminate on June 30, 1907.<sup>2</sup> Central selling offices were established at Düsseldorf, Brussels, and Paris. Negotiations were being conducted at the same time concerning the formation of an international rail pool, which appears to have been consummated on November 28, 1904, to take effect from October 11, 1904. The countries entering this pool and their quotas were as follows: England, 53½ per cent.; Germany, 28.83 per cent.; Belgium, 17.67 per cent.; and France (which came in later),  $\frac{4.8}{104.8}$  for the first year,  $\frac{5.8}{105.8}$  for the second, and  $\frac{6.4}{106.4}$  for the third. This agreement was to terminate on March 30, 1908.<sup>3</sup> The central bureau was located in London, besides local bureaus for each national group. Since then the chief American rail producers have joined this international pool. The *Berliner Tageblatt* reported this fact on December 1, 1904, the *Deutsche Industrie-Zeitung* alludes to the fact in its issue for January 20, 1905 (stating that the pool had al-

<sup>1</sup> Le Syndicat International au point de vue belge.

<sup>2</sup> Cf. Kollmann, p. 47.

<sup>3</sup> Cf. *Ibid.*, p. 47; cf. \*\*\* "La métallurgie française," *Revue écon. internat.*, Décembre, 1904.

ready received numerous orders), and Kollmann states it also in his account of the Steel Syndicate, giving the American members of the pool as the Steel Corporation, the Lackawanna and the Pennsylvania.<sup>1</sup>

Information regarding this agreement and the participation of American interests therein was not very generally known outside the trade apparently, so that on July 1, 1905, the *New York Times* came out with headlines announcing that the European and American producers had divided the world's markets, according to which Central and South America were to be left to the United States,<sup>2</sup> together with other details. Various statements have appeared concerning the terms of the agreement, but none apparently which bear the evidence of complete and authentic information.<sup>3</sup> An article in the *Neue Hamburger Boersen Halle* which seems to have had some special source of inspiration declares that the terms of the agreement, etc., had been kept secret at the express wish of the Americans;<sup>4</sup> and, in this connection, it may be noted that the directors of the Steel Syndicate refused to discuss or divulge their agreements with foreign producers on the ground that they did not feel authorized to reveal the business secrets of their associates.<sup>5</sup> Considering only the aspects of this situation from a German standpoint, it is evident that such agreements are of great significance to the steel trade, and a benefit not only to the German steel trade, but also to the whole national economy. For England, which has been the dumping-ground of all nations, the situation is doubtless more complicated; but for Ger-

<sup>1</sup> Kollmann, p. 47.

<sup>2</sup> In the issue of July 2, 1905, it was stated that the American participants were the United States Steel Corporation and the Pennsylvania, Maryland, and Cambria steel companies.

<sup>3</sup> Cf. *Kartell-Rundschau*, 1905, pp. 390, 392, 440; *Deutsche Industrie-Zeitung*, December 9, 1904, p. 432.

<sup>4</sup> Cf. *Kartell-Rundschau*, 1905, pp. 390, 391.

<sup>5</sup> *Enquete*, S. V., p. 10.

many it can hardly be disputed that an arrangement that tended to raise export prices more nearly to a level with domestic prices would be of almost unalloyed advantage. For the straight rolling mills an international pool in half-products would be particularly beneficial; but, although negotiations in this direction are reported, nothing seems to have been accomplished.

In passing judgment on the Steel Syndicate, it must be borne in mind that it is only a torso until the light rolled products (B-Products) are included in its sales. It is probable that this will be accomplished before long, and it is probable also that the process of concentration will not end at that point. It is possible that something more comprehensive than the United States Steel Corporation, though not as large, may be the final result. According to the prevailing German view of industrial organization, combinations, like men, may be "good" or "bad," according as they conduct themselves. Up to the present the Steel Syndicate should be classed, on the whole, as a "good" combination; but it has yet to endure a serious ordeal, although the present *hausse* may show whether it possesses the most difficult and most valuable of cartell virtues,—moderation.

FRANCIS WALKER.

WASHINGTON, February 26, 1906.

THE INVESTMENTS OF HARVARD COLLEGE,  
1776-1790: AN EPISODE IN THE FINANCES OF  
THE REVOLUTION.

QUINCY in his *History of Harvard College* tells at some length the story of how, in 1777, the funds of the college were invested exclusively in notes, bonds, and mortgages, and how a large part of these were paid off during the period of currency inflation which then followed. He further says that those who had the funds in charge invested all the moneys then received in Continental Loan Office Certificates and State Treasury notes; that they watched the shrinkage from day to day of the net values of these investments during the period of the circulation of the Continental currency, but persisted in their purpose, notwithstanding the continued decline in value of this class of securities, even after the abandonment of paper money; and finally were able to record that by a strict and rigid economy and the purchase of public securities from time to time this loss had been made up.<sup>1</sup> There is enough of interest in this experience to justify a review of the principal events connected with it, even though the subject was treated by Quincy with great thoroughness.

In 1777, when Ebenezer Storer, as treasurer of Harvard College, took over the securities of the college, there were no other avenues for investment than real estate and secured and unsecured notes and bonds. Storer's election by

<sup>1</sup> Quincy's *History of Harvard College*, vol. ii., chap. xxxi., p. 238 et seq.

the corporation took place on the 14th of July, 1777, and this action was ratified by the overseers two days thereafter. In the mean time, on the day of his election by the corporation, he had received bonds, notes, etc., belonging to the college which amounted on their face to £16,443 11s. 10d., after which, according to a memorandum entry in the Harvard College Journal, No. 1, he "open'd a sett of books of which the following is the Journal." The first entry in this book is: "State of Massachusetts Bay, September 1, 1777." "Sundry Acc'ts Dr. to College Stock." The first of the sundry accounts is entitled "Securities for Bonds, Mortgages, Notes, etc." Under this heading are grouped in tabulated form details concerning the bonds and notes, to the number of 219,—some of them bearing date as far back as 1752,—in which the college funds, amounting in all, as above stated, to £16,443 11s. 10d., were then invested. "College Stock" was credited and "Interest" debited with accrued interest on these securities to the amount of £3,627 8s. 2d. Following these entries in the journal was a memorandum list of the real estate possessed by the college, together with a statement concerning land grants made by the Assembly, most of which had failed to materialize.

The first journal entry credited "Stock" with all the income-yielding personal property of the college. This being accomplished, the treasurer proceeded to distribute from this account the several funds charged with appropriations of their income for special uses, through an entry making "Stock" debtor to "Sundry accounts for legacies and donations appropriated." These accounts amounted in all to £10,314 7s. 6d. The "Securities" account being charged with all the notes and bonds, "Stock" thus became responsible for the payment from their income of the specific annual appropriations of the gifts and legacies—a fact which caused considerable trouble during the

times of the currency inflation, but which was rectified as soon as it was appreciated.

The current account books of the college were then presumably in Philadelphia in the hands of John Hancock, and the information on which the several legacy and gift accounts were opened was obtained from the books of a former treasurer. A memorandum entry concerning these accounts discloses the fact that "the capital sums pre-neding the year 1750 are put down at one-fifth part of the cominal sum originally given, which is owing to the College Fund sinking for a number of years by the depreciation of the Paper Currency." At the time when this was written, September, 1777, the premium on gold and silver had reached 75 per cent., according to the official scale of depreciation adopted in Massachusetts in September, 1780,<sup>1</sup> and was then particularly active in its upward flight. The warning conveyed by the recent experience of the college, combined with the conspicuous activity at this time of the elements which tended to undermine confidence in the bills of public credit, on which alone the people were then compelled to depend for a medium of exchange, led Storer to open an account, which he termed "Paper Currency," which he made Dr. to all payments of principal and interest on bonds, while, on the other hand, accounts carrying balances on the other side of the ledger were made Dr. to "Paper Currency." In short, he practically substituted this account for "Cash," and ran all his receipts and expenses through it, so that, whatever the fluctuations of the currency, he dealt only with the nominal amount that he actually received or paid out.

The Massachusetts official scale of depreciation shows that the premium on gold and silver, which in September was 75 per cent., had risen in October to 175 per cent. It was on the first of this latter month that a meeting

<sup>1</sup> *Acts and Resolves, Prov. Mass. Bay*, vol. v. p. 1412 *et seq.*



of the president and fellows was held, at which the treasurer stated that he had received a legacy from the estate of John Barnard, deceased, and sundry persons indebted to the college on bonds had paid them off. Further, he expected to receive more payments of the same sort. It was thereupon voted, "That he be directed, after paying the arrears due from the college, to invest all moneys he has or may receive on acc't of the college in Continental Loan Certificates or Treasurer's Notes of this State."<sup>1</sup>

In measuring the nature of the step taken by the college authorities in the passage of this vote, we must bear in mind that the Continental Congress had not yet received from the separate States even the semblance of authority grudgingly bestowed four years later by the adoption of the Articles of Confederation. As for the State, its affairs were then being administered by an Assembly composed of a Council and a House of Representatives, the Council having been elected by the representatives for the purpose of carrying on the executive functions of the government in conformity with the provisions of the charter in case of simultaneous absence from the province of the governor and lieutenant-governor. This organization had been effected at the suggestion of the Continental Congress, and

<sup>1</sup> Rev. John Witherspoon, at one time President of the College of New Jersey, in a speech on the Finances in the Continental Congress, made use of the following language: "How many guardians were actually led, or indeed were obliged, to put their depreciated and depreciating money into the funds,—I speak from good knowledge. The trustees of the College of New Jersey in June, 1777, directed a committee of theirs to put all the money that should be paid up to them in the loan office, so that they have now nearly invested all." This hint from another college would indicate that revelations similar to those furnished by the records at Cambridge might be disclosed upon investigation elsewhere. From New Haven, however, I am informed that we cannot expect any help in this line. The abrogation of the Charter of the College, etc., of Philadelphia, in 1779, apparently resulted in the assumption by the State of the custody of the funds of the college, so that, although the college was subsequently reincorporated and merged in the University of Pennsylvania, the continuity of possession of the funds in the hands of the college treasurer was destroyed.

Proper search at Princeton may perhaps add to Witherspoon's contribution, which is extracted from his *Works*, vol. iv. p. 341 (2d ed., Philadelphia, 1802). There is but little to hope from the experiences of Dartmouth or from those of William and Mary.

the semblance of a legal origin for the government had been preserved through the sequence of three provincial congresses, the first having been organized by representatives elected to the Provincial Assembly.

The Continental Loan Offices were established by resolve of Congress passed October 3, 1776,<sup>1</sup> when Loan Certificates to the amount of \$5,000,000, to run for three years and to carry an annual interest of 4 per cent., were offered to the public in lots to suit the purchaser, the minimum certificate to be for \$300. The form of these securities was, as the name indicates, a mere acknowledgment that the United States of America had at such a date received from the lender so many dollars, which they promised to pay on a given day, with interest at the rate of 4 per cent. per annum. February 14, 1776, Nathan Appleton, the Loan Commissioner for Massachusetts, said in an advertisement, "The universal credit of these certificates, and their convenience in carrying on commerce, through the United States, must give them preference to all other notes or bonds"; and in another paragraph he calls them "Certificates or Bank Notes."<sup>2</sup>

Notwithstanding the alluring features of the certificates as set forth in the advertisement, a 4 per cent. investment did not prove attractive even to patriots who were willing to condone the lack of form and power on the part of the *de facto* government, the borrower. It was therefore resolved in Congress, February 26, 1777,<sup>3</sup> that "six per cent. interest should be allowed on all sums which had been borrowed"; and thereafter 6 per cent. per annum was the ordinary rate allowed on Loan Certificates. It may be added also that the minimum amount for the certificates was afterward changed to \$200. September 1, 1777, the date

<sup>1</sup> *Journals of Congress*, vol. ii. p. 398.

<sup>2</sup> *Boston Gazette*, February 24, March 3, March 10, 1777.

<sup>3</sup> *Journals of Congress*, vol. iii. p. 79.

when Storer opened his books, there appeared in the *Boston Gazette* a notice from the Boston Loan Office, bearing date August 25, informing the public that the Loan Commissioner had received a new lot of certificates "with which he is ready to borrow any sum of money on interest at six per cent. per annum, for the United States of America." October 6, 1777, the Loan Commissioner published in the same paper a resolve of Congress of September 10, to the effect that

the interest which shall arise after the date of this resolution of Loan Office Certificates, already issued or which shall be issued before the first day of March next, be annually paid at the respective loan offices in bills of exchange on the Commissioners of the United States in Paris at the rate of five livres of France for every Spanish milled dollar, due for interest as aforesaid, or in Continental bills of credit at the option of the respective lenders.

By comparison of dates it will be seen that at the time when the college corporation voted to invest in Continental Loan Certificates the rate of interest on these securities was 6 per cent., and that Congress had already added to the attractiveness (if the expression is permissible) of this form of investment by agreeing to pay the interest in exchange on France.

The "Treasurer's notes of this State," in which also Storer was permitted to make investments, were most of them for short terms, the longest term notes then on the market being those of the £50,000 loan of May 2, 1777,<sup>1</sup> which were payable May 10, 1782. They all bore interest at the rate of 6 per cent., and were all on a currency basis. Many of the loans were, however, practically currency emissions, the notes being given to borrowers either in ten-pound notes or "in sums not less than ten pounds." Such were the fields open to the college for investment at this time,

<sup>1</sup> *Acts and Resolves, Prov. Mass. Bay*, vol. v. p. 638.

and such, practically, were the only interest-bearing obligations in which the treasurer could place the funds upon which he depended for income.

At such a time owners of real estate producing income would cling to it. Private bonds and notes would inevitably be paid off as they matured during the impending decline of the currency, the imminence of which was impressed upon the treasurer through the memorandum entry in the Journal above quoted, concerning the effect upon the college funds of the paper-money craze of the first half of the century. Moreover, obligations of this kind could not be phrased so as to avoid the Massachusetts legislation of 1776,<sup>1</sup> making it a penal offence to receive or pass Continental bills for less than their face value, or so as to escape the effect of the clauses attached to the currency emission acts making State bills of public credit a legal tender to the same extent as silver or gold.<sup>2</sup> The good sense of the members of the corporation showed them that, at a time when the involuntary conversion of all or nearly all their notes receivable into currency was impending, the interest-bearing securities of a *de facto* government, even though so inchoate and powerless as the Continental Congress or so incongruous and unwieldy as the General Court, were more likely to be protected than the currency emitted by the same bodies. It was politic, therefore, to convert the currency received by the college into interest-bearing government securities. Duty towards the corporation and patriotic inclinations were coincident.

At the very outset the treasurer was fortunate enough to invest in some of the Loan Certificates, the interest on which was paid in drafts on the Commissioners at Paris. All certificates issued prior to March 1, 1778, came under this heading, and in subsequent legislation were recognized

<sup>1</sup> April 13, 1776, *Acts and Resolves, Prov. Mass. Bay*, vol. v. pp. 472-473.

<sup>2</sup> *Acts and Resolves, Prov. Mass. Bay*, vol. v. pp. 546, 558, 589, 606.

as being in a specially favorable position.<sup>1</sup> For convenience in converting these interest bills of exchange into currency before crediting his "Interest account," Storer opened in October, 1778, a new account, which he entitled "Bills on France," by means of the entries in which one can learn somewhat about the rise of exchange during the period that the interest on these certificates was thus paid.

In September, 1777, the college funds were, as we have seen, exclusively invested in notes and mortgages. September 1, 1778, the list of investments showed £9,000 in Loan Certificates and £600 in State Treasury notes. September 1, 1779, there were £15,000 in Loan Certificates and £600 in State notes.

The Massachusetts bills of public credit were all called in October 13, 1777, and converted into treasurer's ten-pound interest-bearing notes.<sup>2</sup> Thereafter for a time the only non-interest-bearing bills officially recognized in Massachusetts were those emitted by the Continental Congress.

March 18, 1780, the Continental Congress, by resolve, acknowledged that the bills of credit were passing by common consent in most parts of the United States at least thirty-nine-fortieths below their nominal value. They declared that silver and gold might be received at the Treasury from the States for the quotas already assessed upon them at the rate of one silver dollar for forty of the bills in circulation, and recommended that new bills should be issued by the several States, redeemable in silver or gold, bearing 5 per cent. interest and guaranteed by the United States,—six-tenths of the emission to go to the States emitting them and four-tenths to the United States,—such bills to be emitted only as the bills in circulation were

<sup>1</sup> September 9, 1782 (*Journals of Congress*, vol. vii. p. 456), in consequence of lack of funds in France the loan offices were ordered to desist from making drafts for interest; but January 15, 1784, Congress resolved that the interest on these certificates was not subject to depreciation, and appointed a committee to devise some means for discharging these loans (*Journals of Congress*, vol. ix. p. 35).

<sup>2</sup> *Acts and Resolves, Prov. Mass. Bay*, vol. v. p. 734.

brought in and destroyed, and then only on the basis of one of the new for twenty destroyed.

May 5, 1780, the State of Massachusetts, acting in co-operation with the Continental Congress, laid a tax for calling in the State's proportion of the outstanding bills, and authorized the emission of new bills or notes, payable at a fixed future date, in coin and bearing interest at 5 per cent., the same to be indorsed by the general government before emission. Notwithstanding the fact that the legal tender laws hereinbefore referred to were still in force, the notes were made receivable in current payments on the basis of one of the new emission for forty of the Continental bills.<sup>1</sup> The neglect at this time to repeal the law giving a legal tender function to the Continental bills was cured in September, in the act adopting the scale of depreciation for the adjustment of debts, public as well as private, from January 1, 1777, to April 1, 1780.<sup>2</sup>

We have already followed the investments of the college in Loan Certificates to 1779. There were originally in the "Securities" account 219 private bonds and notes. In 1778 Hancock turned over 5 more, having a face value of £624 17s. 2d., thus raising the number to 224, and bringing up the total value of the securities surrendered by him to £17,068 9s. Of these 110 remained unpaid in August, 1778, at which time the currency was by the scale of depreciation four and one-half for one; and 61 in August, 1779, the depreciation being then a little over sixteen for one. The "Securities" account, including the second delivery of notes, had been reduced at this latter date a little over £13,000, and the balance now stood £4,061 18s. 4d., at which point the fluctuations cease to be of interest. The bulk of the notes had been paid off before the degradation of the currency reached its worst point.

<sup>1</sup>*Acts and Resolves, Prov. Mass. Bay*, vol. v. p. 1178.

<sup>2</sup>*Ibid.*, p. 1412.

As the premium on silver and gold advanced, the college was obliged to protect itself against the rise in prices caused by the inflation of the currency. "Rents unappropriated," which in 1778 yielded £258 1s. 4d., in 1781 had been raised to £16,528 18s. 9d. "College rents," which included "Studies and Cellars," were credited in 1778 £341 4s. 7d.; but in 1781 the amount collected was £18,167 4s. 0d. The charge against the "Salaries and Grants" account for "Assessments"<sup>1</sup> on students was, in 1778, £1,252 9s. 4d., and in 1781 it reached £52,048 15s. 6d. In the summer of 1781 Storer brought such of his accounts as were under his absolute control nominally to a specie basis, and the income from the rent accounts and assessments next year fell respectively to £274 6s. from rents unappropriated, £510 5s. from college rents, and £1,052 15s. 0d. from assessments. Coincident with the nominal increase of income came a corresponding increase of expenditure, and in a similar way the profit and loss item (which, under prudent management, the corporation sought to carry each year to stock) grew, while the currency was being inflated, to proportions which seemed to show that the college was growing rich. The bubble, however, had to be pricked sooner or later, and the adoption of the Massachusetts Depreciation Act in 1780, if it did not actually fix the time, indicated that it was near at hand.

The new emission was put forth in the spring of 1780.<sup>2</sup> The Massachusetts Depreciation Act was passed in the fall.

<sup>1</sup> The charges against the steward in this account for "Assessments" were probably uniform during this period. In an early entry they were specifically divided among "Tuition, Hollis Professor, Hancock Professor, Library, Gallery, Steward, and Monitors," "Gallery" being for a seat in the town church gallery. The records show that the "Grants" themselves furnish illustration of the currency movements. October 4, 1779, they were put upon the basis of ten for one; November 29, fifteen for one; March 21, 1780, thirty for one; May 9, forty for one; September 15, seventy for one; February 27, 1781, seventy-five for one. The classes which were graduated from 1772-1777, inclusive, averaged forty-four in number. From 1778-1783, inclusive, the average was thirty. In 1784 the number graduated was forty-four.

<sup>2</sup> May 5, 1780, *Acts and Resolves, Prov. Mass. Bay*, vol. v. p. 1178.



If the bills of the new emission had been received with favor and the terms of the Depreciation Act had been cordially accepted, Storer could have put all his accounts at once on a specie basis. These conditions, however, were not fulfilled. Many States failed to provide for the withdrawal of the portion of the Continental currency assigned to them, and Congress itself exceeded the self-imposed \$200,000,000 limit for the emission of Continental bills. Consequently, many of these bills remained in circulation, under circumstances which compelled their discredit in popular esteem far below the final term in the scale of depreciation; and their decline in turn affected the bills of the new emission. Specie began to come out, and the treasurer had to deal in his accounts with three forms of currency, the relations between which were constantly changing. He hesitated for a time what to do; but in the summer of 1781 he scaled down his accounts through an account termed "Difference of Exchange," by means of credits and debits which expressed the difference between the book entries and the silver value which they represented, no matter what the currency in which the entries were made. He was compelled to adopt some such method as this because the "Paper Currency" account was no longer available, in consequence of there being in circulation two paper currencies, the relations between which fluctuated, and neither of which had any stable relations with specie. By means of the "Difference of Exchange" account and "New Emission" and "Old Emission" accounts, he covered the ground. In July, 1781, he brought the "Steward's" account to a specie basis. The difficulties that he encountered in carrying out the general process will be illustrated by a glance at the method adopted in this particular account.

Caleb Gannett, the steward, was debtor in old emission for £97,012 11s. 2d. This at seventy-five for one rep-



sented £1,293 10s. 0d. in silver. Storer credited Gannett, and charged "Difference of Exchange" with £95,719 1s. 2d., thus leaving the steward's debtor balance expressed in terms of silver value. The steward had taken credit in July for remittances in "New Emission" at four for one, and in "Old Emission" at seventy-five for one; and these credits were extended without reducing the new emission to old emission, the term in which the debtor balance was stated. The complication which this might have produced was avoided by charging Gannett and crediting "Difference of Exchange" with the difference between the sums for which Gannett had actually taken credit and the silver value of the remittances. After these entries the balance of the account was the amount which Gannett owed, stated in terms of silver value. These entries in the steward's account cover dates in May, June, and July. If we turn to the corporation records, we can see what Gannett was contending against. June 8 it was recorded that, when the bills were made out, exchange was seventy-five, but it was then (June 8) much higher. A committee was to reduce the bills to silver, but the steward was to be permitted to receive bills at current exchange. June 19 the steward was directed to receive not less than one-quarter in coin, the three-quarters to be in bills of new emission at three for one. June 28 exchange had increased,—new emission was four for one. July 26 the steward was instructed to receive no more paper money.

In September, 1780, the investments in Loan Certificates reached the sum of £24,090, Massachusetts notes remaining £600. In June, 1781, the Loan Certificates amounted to £28,590.

Up to this date the Loan Certificates received by the college had been subscribed for directly at the loan office, Their values were stated in dollars, and they had been paid for at the rate of one New England pound for three and

one-third dollars.<sup>1</sup> The interest on the certificates issued prior to March 1, 1778, was, as we have seen, paid in drafts on France. On money loaned after that date it was provided by Congress, June 29, 1779,<sup>2</sup> that until some more accurate standard of value could be devised the interest should be increased in proportion to the sum of Continental paper money which might be in circulation after the date of such loans respectively. April 18, 1780, Congress announced definitely the adoption of the policy of scaling down loans to the current value of the bills when loaned, and June 28, 1780,<sup>3</sup> confirmed this by resolving that "the principal of all loans that have been made to these United States shall finally be discharged by paying the full current value of the bills when loaned." At the same time a scale of depreciation was fixed for the purpose of determining this value. In September, 1780,<sup>4</sup> it was resolved "that the Board of Treasury have power to stop the issuing of all loan certificates under former resolutions of Congress," and a new form of certificate was adopted, stating the value of the money received in Spanish milled dollars.<sup>5</sup>

In 1781 Robert Morris assumed charge of the financial affairs of the general government, and strenuous efforts were put forth to secure money by other means than through loan offices. Certificates continued to be issued in payment for supplies, for interest, and for other purposes by different government officials, but the regular loan certificates were no longer prominent in the market.

<sup>1</sup> It must be constantly borne in mind that we are dealing with the New England pound, and not with sterling money.

<sup>2</sup> *Journals of Congress*, vol. v. p. 275.

<sup>3</sup> *Ibid.*, vol. vi. pp. 100, 101. The resolve of April 18, which is not in the printed *Journal* at the proper date, is recited here at full length.

<sup>4</sup> *Ibid.*, vol. vi. pp. 178, 179.

<sup>5</sup> As to Treasury notes during the same period, legislation was effected in January, 1781, for the liquidation of State notes given before April, 1780 (*Laws and Resolves of Mass.*, 1780-1781, p. 6). A scale of depreciation for the consolidation in gold and silver of debts due from the State which were specified in bills of the new emission was passed in November, 1781; and in February, 1785, all outstanding accounts or demands against the State were ordered to be presented for liquidation before January 1, 1786 (*Laws and Resolves of Mass.*, 1784-1785, p. 113).

Storer then turned his attention to State Treasury notes. For three years the college investments in this form had been stationary at £600. It is probable that the small size of the greater part of the Treasury notes may have deterred the treasurer from purchasing them. But now the State was in the field as borrower under the new constitution, and John Hancock was governor. The £600 investment in State Treasury notes in 1780 rose to £833 4s. in 1781. In 1782 it reached £1,387 15s. 8d. In 1783 it amounted to £3,360 18s. 8d.; and in 1784 to £6,656 13s. 9d.

Notwithstanding the greater stability given to the State government by its organization under the new constitution in 1780, we shall find, if we turn to the college "Profit and Loss" account, that, beginning with 1780, the State notes purchased by the treasurer were taken in at a discount. Prior to that time these notes had shared the depreciation concurrently with the currency, but with the attempt to place financial affairs upon a specie basis came the discrimination natural to the situation. The notes of the new emission themselves, payable at a future date in silver, even though they bore 5 per cent. interest, fell at once to three for one of specie, and shortly thereafter to four for one. Profit and loss was credited with £181 6s. 4d. as the discount on Treasury notes purchased in 1781, and with £1,107 12s. 8d. in 1782. Next year Loan Certificates also were purchased, and the discount on both of these securities carried to profit and loss was £2,887 11s. 7d. In 1784 153 Loan Certificates, having a nominal value of \$100,100, were scaled down on the college books to \$25,787,  $\frac{2}{3}$ ths, by the application of the Continental scale of depreciation. The difference, \$74,312,  $\frac{1}{3}$ ths,  $\frac{1}{3}$ ths (equal to £22,293 15s. 6d.), was carried to the debtor side of "Difference of Exchange"; and the reduced valuation, \$25,787,  $\frac{2}{3}$ ths,  $\frac{1}{3}$ ths (equal to £7,736 3s. 7d.), was carried to the debtor side of a new loan certificate account.

In the face of this shrinkage of nominal values the purchase of government securities was maintained, and in 1785 the discount on these purchases carried to the credit of profit and loss was £4,238 4s. 4d. Here we have the key to the manner in which the funds of the college were saved from the threatened wreck. The notes and public securities which in the earlier stage had been taken by the college because it had no choice were now deliberately selected for investment. The treasurer and those who acted with him may be said to have speculated in the State and Continental funds, or, to state it more carefully, they had faith and foresight which justified them in buying these securities at a time when the political and financial prospects were dark.

In 1787 the treasurer's statement of the college finances shows investments in "consolidated" values amounting to £25,841; but a memorial was then submitted to the State authorities, showing that the entire personal investments of the college actually amounted only to £12,195 7s. 8d., while the amount charged against the stock account for gifts, legacies, etc., appropriated to specific purposes was £14,819 10s. 6d., thus revealing an actual deficit in the stock account of £2,624 2s. 10d. Inasmuch as there had been a surplus of £11,078 3s. 4d. in 1777, it was claimed that this statement showed a clear loss to the college of £13,702 6s. 2d.

The following extract from the memorial to the General Court, from which the above is taken, furnishes an explanation of the manner in which this estimate of the investments was made up:—

It may be thought that this representation should be founded on the apparent and not the real state of the funds; but if it is considered that the stock, if it had been left in its original state, would have enabled them to swell it to at least four times the present appearance, they conceive that they have taken the right method

of calculation. The interest also on what was sunk by the paper currency would in the last eight years have amounted to a large sum, the college having received in eight years in lieu of silver and gold £17,875 8s. 1d. Of this was invested in the public funds £15,600, which, when consolidated, amounted only to £6,070 4s, and will now sell only for the sum of £758 15s. 6d.

This pessimistic report presents the worst possible side of the picture, but it must be remembered that the purpose of the appeal to the legislature was to secure relief from the injury received by the college through the legal tender acts, which had compelled the reception of discredited paper money at face value.

In 1782 commissioners were appointed to liquidate the Continental certificates issued for supplies.<sup>1</sup> In 1786<sup>2</sup> Congress resolved that

all holders of loan office certificates issued since the first of March, 1778, be and they are hereby authorized to present the same to the loan officer of the State in which such certificates issued in order that the specie value thereof may be liquidated.

In 1787, when the memorial to the General Court was prepared, although it was four years after the signing of the Peace Treaty, the only tie that united the States was the feeble Confederacy. Doubts as to the future perplexed thinking men and discredited government securities. Some person familiar with the details of the memorial to the General Court made the following intrusive entry in Ledger A, under the Profit and Loss Account: "Memorandum. For observations on this Account, see p. 76." The entry to which he thus refers the reader is as follows:

1787, January. From an inspection of the College Books it will appear that since the paper currency stop'd the college has made great profits and a large addition to its stock, but these profits

<sup>1</sup> *Journals of Congress*, February 20, 1782, vol. vii. p. 284.

<sup>2</sup> February 1, 1786, *Journals of Congress*, vol. xi. p. 20.

are perhaps merely imaginary as they chiefly, if not wholly, arise from having purchased public securities at a large discount which with the interest due on them are estimated on the books at the nominal value, and time only can discover whether these are profits or not, but if these securities are estimated at the present current value the whole college stock would not make good the appropriation as fully appears by the acc't prepared to lay before the general court by their order the next session.

Then follow in a note the figures relative to the values taken from the report, with the added statement that the value there given £758 15s. 6d., is on the basis of 2s. 6d. for 20s. of the "Consolidated" value. Here we have a direct statement as to the market value of the government securities, which had already been reduced under the application of the Depreciation Act. They were worth only one-eighth of the "Consolidated" valuation, or about one-twentieth of the cost price in the degraded currency. On the whole, this was doing pretty well, although it may be inferred that the critic did not think so. The creditors of the college who paid off their obligations in the depreciated currency would have done better by themselves if they had waited a little longer. The time when this memorial was presented to the General Court was, perhaps, the most favorable opportunity they could have selected for a pitiable showing. Next year, 1788, the corporation, after having first authorized the treasurer to invest certain moneys in "private securities," changed their instructions, and authorized the purchase of "public securities," "at four shillings being the current price,"—a rise in value over that given in the memorial of about  $7\frac{1}{2}$  per cent. on the face value of the securities. In February, 1790, the treasurer was authorized to take the sum due from his Excellency Governor Hancock, both principal and interest, in Continental securities at ten shillings upon the pound,—a rise of 30 per cent. over the 1788 quotation.

In 1787 and in 1788 the investments in Continental and State securities remained substantially unchanged, the total amount being a little over £22,000. The adoption of the Federal Constitution in 1788 gave assurance that the trials and sufferings of the war were not to be thrown away, and that the obligations emitted by the government would, as afterward liquidated, be somehow cared for. Yet the strain did not yield at once. July 3, 1789, a committee reported to the overseers that the treasurer's statement appeared to be "a just reference to the present state of the College Treasury, but that the public securities, which in this account are estimated at the specie value, would, if reduced to the present cash price, make a difference of at least thirty thousand pounds in the College fund."<sup>1</sup> The "specie value" refers to the valuation set upon the securities when they were scaled down by the scale of depreciation. This term is used occasionally in the records, as are also the phrases "nominal value" and "real value." Apparently, nominal value meant the currency value. "Real value" and "specie value" were probably synonymous, and meant the values assigned at the time when the accounts were scaled down by the scale of depreciation, while "cash price" meant what the committee conceived that the securities could be sold for.

The college investments in Loan Certificates, liquidated certificates, and State notes had in 1789 risen to £30,348 11s. 9d., besides which there was unliquidated past due interest on the certificates amounting to £2,579 15s. 0d., and interest bills £5,410 5s. 4d. Whatever the opinion of the committee who, in the above report, questioned the value of the investments, the treasurer had evidently put all his spare funds in this form of investment.

<sup>1</sup> The total valuation of the property of the college August 27, 1789, in the report from which this statement is extracted, was £48,186 16s. 3d. The condition of the government securities at that time is set forth in the next paragraph in the text.



Then came the establishment of the new government, the inauguration of Washington, and the appointment of Hamilton as Secretary of the Treasury, and his plans for funding the Revolutionary debts. Those who during the dark period of distrust had purchased government funds saw them rise in value far more rapidly than they could have anticipated. Here we may leave the treasurer's books, and turn to the records of the corporation for signs of the times.

On June 16, 1791, it was voted by the corporation "that the treasurer be directed to borrow the sum of three hundred pounds from the Massachusetts Bank to loan to the Bank of the United States; and that the president execute a proper power for that purpose if necessary." Authorizations to transfer funded stock in the Massachusetts Loan Office to the United States Bank were passed November 29, 1791, and again June 7, 1792, these transfers being in payment of a subscription for stock. Such votes as these sufficiently indicate a changed condition of affairs.

In 1793 the accounts were converted from pounds, shillings, and pence into dollars and cents. The system in which the nominal currency was divided into dollars, ninetieths, and eighths, the eighth being practically the unit, finds no lodgment in the treasurer's books except in entries like those dealing with the reduction of securities by the scale of depreciation, one of which has already been described. February 18, 1793, the corporation in a memorial to the General Court stated

that at the beginning of the late war the funds of the university consisted chiefly of bonds; that a paper currency taking place the corporation ordered their treasurer to receive it agreeably to the Acts and Resolves of the Congress and this State and invest the same in Loan Office Certificates and State notes; that they continued to take this money till it had greatly depreciated and on a liquidation of these notes and certificates, when the paper currency stopped, it appeared that one half the stock was sunk; that



by a strict and rigid economy and the purchase of public securities from time to time this loss has been made up.

May 14, 1793, a committee was appointed to wait upon Governor Hancock, and request him to pay the sum due from him to the college. If he could not pay the whole in specie, they were authorized "to take the principal of the debt in funded six per cents. at par." Thus nominal, real, and specie values and cash prices had reached an equality.

Quincy, in reviewing the events hereinbefore set forth, says, "The prosperous condition of the college finances may be especially attributed to three individuals: Ebenezer Storer, James Bowdoin and John Lowell." For an appreciative estimate of the work of these men, and for tabulated statements of the condition of the college funds, the reader is referred to Quincy's great work.

The glimpse behind the curtain which this brief inspection of Storer's accounts has enabled us to take reveals the great responsibility thrust upon the shoulders of the men who then had charge of the college investments, and shows the perplexing nature of their task. Their steadfast trust that a government must be evolved out of the chaos which seemed to be impending after the States had triumphed in the field, alone saved the college from hopeless bankruptcy. Our first thoughts as we watch the conversion of the college funds into a currency which fell in three years from par to forty for one may be in admiration for the master minds which were able to keep any sort of control over a trust fund under such circumstances; but what shall we say of the sagacity which so shaped these investments that within four years after the period of greatest depression it could be said, "This loss has been made up"?

ANDREW MCFARLAND DAVIS.

## TYPES OF AMERICAN LABOR UNIONS.—THE MUSICIANS OF ST. LOUIS AND NEW YORK.

It has been a long struggle of the musicians to get themselves looked upon as workers instead of players. Even yet they are not taken as seriously as they wish, though they have practised trade-union methods these ten to twenty years. The contest was first internal; for they could but painfully give up the idea that they were artists, and neither players nor workers. Even conceding that, though artists, they worked hard for their living, the old-fashioned ones contended that they were at least a profession, and not a craft. This internal revolution is the first stage in their history. The second is their growth as a trade union into a more complete control of their business throughout the United States and Canada than that enjoyed by any other large union in the American Federation of Labor.

The former National League of Musicians represented the artistic and professional element. It was organized in 1886 by delegates from musical societies in New York, Boston, Philadelphia, Cincinnati, and Milwaukee. Ten years thereafter it included 101 "locals." Some of these had been in existence several years, the one in New York dating from 1863. The National League had no effective control over the locals, and prescribed no rules binding upon them. Consequently they differed widely in their policies and tactics. The older ones were incorporated under State charters, and held property. Each of them, like the trade unions which they shunned, set up a scale of minimum prices. Likewise they prohibited their members from playing with non-members. But their State

charters made it precarious for them to expel a member who cut the prices or played with outsiders. They were, in fact, in a position similar to that of an association of physicians which adopts a schedule of recommended prices to be charged by its members. They lacked, however, that protection, through limitation of numbers, which comes to physicians and lawyers in the legal certificate of competency based on an apprenticeship of study and an examination.

The younger locals, especially those in the West, were less influenced by the professional element whose centre was in New York. They were organized after the example of the Knights of Labor or the trade unions of the American Federation of Labor. Although the National League had been invited year after year by the Knights and by the Federation to become affiliated, yet it always declined. Had the vote been taken by locals, the invitation would have been accepted; but, by a peculiar system of proxies assigned through a committee after the convention assembled, the vote of these smaller locals, who could not afford to send delegates, was cast by the older locals, and thus New York and Philadelphia were able to control the conventions. Meanwhile the American Federation of Labor had chartered musicians' unions in several localities, with the object of forming them eventually into a national body. To prevent this dual organization local officers of the National League at St. Louis, Cincinnati, Chicago, and Indianapolis joined with the Federation of Labor in 1896 in calling a convention. The invitation was extended to locals of the League, as well as those organized by the Federation. The convention met at Indianapolis, the headquarters at that time of the American Federation of Labor, and included delegates from 18 locals of the League and 9 other locals chartered by the Federation. The fact that these 9 locals contained members suspended from the

League nearly disrupted the convention, since to admit such was inconsistent with the object of preventing a dual organization. But this difficulty was bridged by a formal reply from the Executive Council of the Federation that national bodies once affiliated are guaranteed autonomy in regulating their membership, so that the proposed association would become the sole judge of the qualifications of union musicians throughout the country. With this assurance the American Federation of Musicians was organized, with a charter of affiliation from the American Federation of Labor. It elected as its president Owen Miller, of the St. Louis local, a former president of the National League and still in good standing.

The officers of the League would not be conciliated. At once they expelled every local that joined the new association. But their efforts were futile. Within five months 48 of their 101 locals went over, and in 1902 only 3 locals were left in the old organization. A decision handed down from a Missouri court reinstated the expelled locals and compelled a division of the funds. This was the final blow. The League held its last convention in 1902. "It started at the top, ignoring the rank and file, and finally came out at the bottom." The New York local, the Musicians' Mutual Protective Union, with 4,000 members, held out for a year longer, but was compelled to yield and become "No. 310." At the present time the new organization has 424 locals and 45,000 members. It has brought in practically all instrumental musicians in the United States and Canada who play for a living, either as leaders or as members of orchestras and bands, including all travelling musicians, and excepting only those who are soloists or organists and those members of local companies who play only their own series of concerts. How this has come about will appear from the history of the St. Louis local, which led the movement of organization on trade-

union lines and furnished both the model constitution and by-laws which others have copied and the national officer who has guided the Federation.

A musicians' union is similar to a stock exchange or a produce exchange, and its headquarters are a "pit" where buyers and sellers of instrumental music meet to make engagements. The buyers are "leaders" of orchestras, bands, or concerts: the sellers are the musicians. The buyers are also contractors or agents, who represent, for the time being, the owners or managers of theatres, concert halls, summer gardens, restaurants, parades, pageants, and so on. But, like the broker on the exchange, they must be members of the union if they are to have the privileges of the floor. Like the broker, too, they are prohibited from buying musical talent of those who are not members. Thus the musicians' union, like the stock exchange, is "closed" on both sides,—members only can buy and sell, hence members only can be employers and employed. Every member is entitled to become a "leader," if he can find a client; (that is, if he can find a proprietor or manager who will make a contract authorizing him to furnish musicians). Consequently, like the brokers, a member may be to-day a buyer that is, an employer of his fellow-members, making a contract for their services, and to-morrow he may be a seller, that is, a wage-earner, contracting for his services with a fellow-member. Thus the lines are not always closely drawn. Only a few of the members are known solely as leaders. They are the fortunates who have contracts with theatres and the like, or who make up orchestras designated and advertised under their own name as "director." In the St. Louis union of 600 members, only about 100 are employed steadily by these directors in theatres. The others are employed now by one leader, now by another, on short engagements and for special occasions. Yet those who are predomi-

nantly leaders are clearly set off from the others. They are a small minority, and the policy of the union is determined by the majority, whose interests are those of wage-earners. This will be seen at many points.

Formerly the musicians met at saloons to make their engagements, each clique or grade of the local talent having its favorite "joint," whose proprietor collected his rent in the "drinks." The first step of the union was to rent its own headquarters. The next was to bring in all the local musicians. The two worked together, as will appear. In the matter of headquarters, unlike other unions, the musicians must have a room large enough for their daily gatherings. The New York union provides a floor where a thousand or more of its members can meet every day. The St. Louis local accommodates a hundred or more. To secure such a place with offices adjoining, the larger locals have found it necessary to buy or build a house. To do this, the older ones took out articles of incorporation under State laws, not as unions, but as benefit associations, enabling them to hold property not for profit. But these articles of incorporation prevented them from freely enforcing discipline by fines, expulsion, and boycott. The younger locals, of which St. Louis is the type, avoided incorporation, but shrewdly resorted to the device of the stock exchange. The "New York Stock Exchange Building Company" is composed of the same members as the "New York Stock Exchange." But the former is incorporated, owns the building, and leases it to the latter, which is unincorporated. The Aschenbroedel Club of St. Louis is an incorporated body, and the unincorporated Musicians' Mutual Benefit Association ("Local 2, St. Louis, American Federation of Musicians") has a by-law, adopted in 1894:—

Whereas the main object for the formation of the Aschenbroedel Club was to unite the professional musicians of St. Louis into a social body, with corporate powers, with a view of securing a suitable property for a home; and

Whereas, in spite of all inducements offered, a large number of the professional musicians are still outside of the organization; and

Whereas, the fact is that every professional musician in the city is reaping the benefit of this organization (and with the exception of those that are members) without assuming any of its responsibilities; and

Whereas, believing that every professional musician ought by right to be a member of this organization,—therefore be it

*Resolved*, first, That in future all who are accepted members of the Musicians' Mutual Benefit Association shall also become members of the Aschenbroedel Club.

Second, That a violation of the rules and regulations of the Aschenbroedel Club shall be considered a like violation in the Musicians' Mutual Benefit Association, and punished accordingly by the proper authorities of the Musicians' Mutual Benefit Association.

Third, That the Musicians' Mutual Benefit Association shall in no sense be held responsible for any of the liabilities of the Aschenbroedel Club.<sup>1</sup>

The St. Louis Aschenbroedel Club has one set of officers chosen from the older, conservative, and commercial-like men, and holds only an annual meeting. The Benefit Association, or union, has younger and more aggressive officers, and holds fortnightly or special meetings. The Aschenbroedel Club collects no dues or fees, but covers its expenses through a lease of its building and equipment to the union. It operates a bar and buffet, billiard tables, and so on. It never expels or disciplines a member, but, when one loses

<sup>1</sup> The term "Aschenbroedel" is not the equivalent of "Cinderella." After the death of a beloved leader in New York, named Asche, a social club of musicians, desiring to honor his memory, but to avoid the epithet "ashes," added the suffix "broedel," signifying the rollicking character of their club. The term has spread to similar clubs throughout the United States. The New York club was the original musicians' club in America, organized in 1860. Unlike the St. Louis Aschenbroedel, its membership is limited to those who speak German, and it includes only about one-fifth of the members of the union. It owns a club-house valued at \$150,000. The local union is separately incorporated. Other nationalities within the union have their own clubs.



his membership in the union on account of an infraction of union discipline, his membership in the incorporated body is worthless.

This dual arrangement has allowed the union to slip through the meshes of the law by means of a frank and unusual plea. A member was expelled by the Benefit Association for violating a sympathetic strike order, forbidding him to ride on the cars of the street railway company during a strike of its employees. He secured a permanent injunction in a lower court restraining the officers from enforcing the order, on the ground that he had a property right in the sick and mortuary benefits of the association, and that the order of expulsion was not passed in the manner provided for amending its by-laws. The higher court reversed this judgment on the plea set up by the union<sup>1</sup> that its by-laws and regulations were contracts in restraint of trade; that it was a monopoly, in that a musician could not find employment without being a member of the association; that the plaintiff was aware of its illegal character when he joined, and had indeed joined for the purpose of profiting by such monopolistic regulations which he had faithfully observed; that the benefit sections of the by-laws were merely aids to enforce the restrictive sections, and could not be separated from them; and that for the court to sustain the injunction would be specifically to enforce a contract with a monopoly or association in restraint of trade. To support this plea, the union submitted its constitution and by-laws showing its scale of minimum prices, its prohibitions, and other compulsory conditions affecting membership, and the application for membership signed by the plaintiff. The court, in rendering its decision, said:—

<sup>1</sup> St. Louis Court of Appeals, 1901, *Froelich v. Musicians' Mutual Benefit Association et al.* Brief of appellant, Frank R. Ryan, attorney.



In the case at bar the by-laws impose on the members of the association a most slavish observance of the most stringent rules and regulations in restraint of trade. So strict and far-reaching are they that no musician in the city of St. Louis; and for that matter in any city of the country, can find employment as a musician unless he is a member of the association. Such a confederation and combination is a trust, pure and simple. . . . The plaintiff is in the attitude of asking the court to keep him where he says he has no right to be and to retain him in a position where he may aid in the support and maintenance of an illegal association, and where he may continue to support and keep up a monopoly of the services of musicians. Courts have never dealt with monopolies except to restrain or destroy them, and we decline to depart from this wholesome rule in this case and reverse the judgment with directions to the trial court to dissolve the injunction and to dismiss the plaintiff's bill. Decision unanimous. 93 Mo. App. 383.

The legal mind is perhaps profound where it seems comical. At any rate, the St. Louis local thus demonstrated that to enforce discipline it should avoid incorporation. The secretary has impressed the lesson on other locals, and has advised all that hold State charters to give them up or to use them for conducting the social and business functions of the organization, leaving the enforcement of prices and regulations to unincorporated associations which cannot be "haled into court every time they attempt to enforce the discipline of the American Federation of Musicians."<sup>1</sup>

Turn now to the New York local. Its members, operating under a State charter granted by special act in 1864, soon learned its limitations. They went again to the legislature, and secured in 1878 an amendment so extraordinary as scarcely to be explained on modern lines of legislation.<sup>2</sup> This amendment added to the other objects

<sup>1</sup> *International Musician*, June, 1904.

<sup>2</sup> Laws of 1878: "An act to amend chapter 168 of the laws of 1864 entitled 'An act to incorporate the Musical Mutual Protective Union,' passed April 11, 1864."

of the union "the establishment of a uniform rate of prices to be charged by members of said society, and the enforcement of good faith and fair dealing between its members." The amendment continues:—

It shall be lawful for said society, from time to time, to fix and prescribe uniform rates of prices to be charged by members of said society for their professional services, and for that purpose from time to time to make and adopt such By-laws as it may approve. And any member of said society violating any such By-law may be expelled from said society (after being afforded an opportunity to be heard in his defence) in such manner as such society may, from time to time, prescribe by By-laws which it is hereby authorized to make.

By this remarkable act of legislation the New York musicians, twenty-five years before they joined the trade unions, sought legally to practise trade-union tactics. Yet, while the act grants certain powers assumed by trade unions, it fails, of course, to grant the most effective weapons of unions, the power to strike or boycott and the power to fine or expel a member for working with a non-member or working for an "unfair" employer. Nevertheless, the union adopts and enforces this class of by-laws, as well as by-laws enforcing the minimum prices. But the fact of incorporation gives to a fined or expelled member a standing in court, and this is seen in the cautious use of its discipline by the musicians' union. An act of incorporation is strictly construed by the courts. All powers not expressly granted by the legislature are withheld. But an unincorporated union enjoys all powers not expressly prohibited by the courts. In States other than New York this principle would work against the incorporated union. But in New York, where the courts have permitted large powers to unincorporated unions, they have allowed the same powers to the incorporated musicians' union.<sup>1</sup>

<sup>1</sup> *Thomas v. Musicians' Mutual Protective Union*, 121 New York, 46 (1890).

Consequently, the union has not seen fit to abandon its charter, but rather has recently gone to the farthest extreme of any American union in exposing itself to attack by investing its funds in a building for headquarters costing \$300,000.

The St. Louis local worked out another legal device bearing on the "closed orchestra." This is the form of contract between managers, leaders, and members. Formerly the leaders were in the position of independent employers without capital, who contracted with managers to furnish musicians. Now the leader is made the agent of the musicians whom he employs. He first enters into a contract with the manager to furnish musicians as their agent, either for the season or for a special occasion. The form covering a special occasion has a clause:—

It is further agreed that if there are any bands or orchestras employed for this engagement who are unfair to the American Federation of Musicians, this contract shall be considered null and void, as far as the party of the first part (the leader) is concerned, but does not relieve party of the second part.

The leader then makes contracts with individual musicians "subject to the rules and regulations of the Musicians' Mutual Benefit Association, Local No. 2, American Federation of Musicians, as prescribed in the Constitution, By-laws, and Price-list." These contracts are signed in duplicate, and a copy is filed with the recording secretary, on the pain of penalties of \$25 to \$100 for failure. By making the leader the agent of the manager instead of the principal, the manager is made responsible for the wages of the musicians, while, as agent of the musicians, the leader who failstopay them can be prosecuted for embezzlement instead of sued for a debt, and at the same time their wages while in his hands are exempt from attachment for

his debts. These contracts probably would be thrown out of court on the same ground that the foregoing injunction was dissolved, although they have never been tested. The union has a more expeditious remedy. It fines or expels the leader for violating the rules, and the St. Louis local has collected in this way at least one fine as high as \$1,000.

Evidently, it is through control of the leaders that the union is trying to control the trade. Partly on this account the union has failed as yet to introduce well-recognized agencies of other crafts composed solely of wage-earners. None of the locals has a "business agent" or "walking delegate." Such an officer has not been needed for purposes of organization, since the trade has been fully organized in other ways. He would be needed only as a detective to prevent leaders and members from violating the rules, and especially from paying and accepting less than the minimum scale of prices. The usual method of cutting prices is for the members to pay back secretly to the leader a rebate on the published tariff. There are other forms of rebate easily prevented, such as accepting tickets as part payment, giving presents, allowing one's self to be fined, or paying extortionate prices for articles. But these secret rebates are not discovered unless the parties have a "falling out" and one of them "turns union evidence." It was through such an exposure that the leader of the Metropolitan Opera in New York was fined \$200. In lieu of a business agent the unions have given much attention to perfecting their control of the leaders. These are required to be members of the union, and members are prohibited from playing for non-union leaders. This, of course, subjects the leader to discipline, but it injects a diversity of interests into the organization. The result is several more or less futile rules. The leader in St. Louis is expelled if he offers a member less than the

schedule of rates or if he threatens to blacklist a member either for accepting other engagements or for reporting infractions of the rules. Again, the leaders, although a small minority, are likely to have undue influence through their power as employers. To reduce their power, nearly all of the unions prohibit a leader from taking a contract for a season engagement where he cannot personally be present. The value of this rule is seen by contrast in the case of Baltimore, where one leader has secured the contracts for all of the theatres. He thereby controls the best opportunities for employment of his fellow-members, and this enables him to control the meetings and to dictate the policy of the union. Consequently the scale of wages is lower and the conditions of employment inferior to those in other places, and Baltimore musicians are considered a menace in competition with Washington and Philadelphia musicians. In Brooklyn, too, a single leader controls all of the theatres, but this has not led to abuse, because the Brooklyn musicians are a small minority of the metropolitan union. The rule of several other unions, by preventing such a monopoly, preserves to the rank and file a stronger control. The Chicago local expelled a leader for taking the contracts for three theatre orchestras.

A local leader is not permitted to import or "colonize" musicians, even if they are members of other locals, without the consent of his local. The case is different with "traveling leaders." There are three well-known grades of traveling theatrical companies. New York is the centre where these are made up, though a few go out from Chicago. One grade is the opera, or minstrel show, with its own complete orchestra and leader, or the symphony company. Such a company is independent of local musicians, and, like the Boston Symphony Orchestra, is able to continue non-union. The next grade is the "skeleton" orchestra, composed of three or four musicians and the leader. These

must be members in good standing, else they cannot secure local musicians in the places visited, to fill out their orchestra. Last is the theatrical company that carries only its leader, who must be a pianist, in case he cannot make up a local orchestra, and must be a member if he expects to employ local players. If the skeleton orchestra or single leaders remain in a place less than four weeks, they do not take out transfer cards from the local of their origin. If they stay longer, they must transfer their membership. Some of these leaders are not members of a local, and, in order to bring them in, the Federation at a recent convention provided a card of conditional membership issued by the national organization. When such a leader "locates," his card is converted into a local membership. If a leader holding such a card plays in a non-union house, his card is forfeited, and this prevents him from getting an orchestra in a union house. By means of these rules the Federation has effectually "unionized" the theatres and orchestras throughout the United States and Canada. There remain but fifty leaders, theatres, and orchestras on the "unfair list," the Boston Symphony Orchestra being the only important one.

It will be seen that the musicians' union is not only a "closed shop" union: it is also a closed employers' association. The contractor, or leader, must be a member of the union. Consequently, unlike other crafts in the modern labor movement, the musicians retain the character of a guild with its masters and journeymen. This diversity of interest has led to considerable discussion and to the proposal that, imitating other unions, the leaders should be excluded, and that a member who takes a contract should be given an honorary discharge. The nearest that this proposal has come to be acted upon is at Cedar Rapids, where the local classifies the leaders and requires them to take out a leader's license, for which they pay \$25. This

arrangement is an innovation. In other places the leaders are on the same basis as other members, and any member can become a leader simply by getting a contract. The musicians point out that their leaders are on much more intimate terms with the rank and file than are the contractors in other trades. Their interests are the same. They require no capital beyond that of the others; they perform in company with their fellows; and they are continually reverting to ordinary membership. On the other hand, the ease with which a member becomes a leader causes a severe competition for leadership. In New York fifty musicians may be "pulling the wires" to get a theatrical leader's position away from him. Nearly all the grievances and discipline with which the union is occupied spring from this cut-throat competition. If the leaders were separated, if they formed their own contractors' association with their own rules and discipline, and if then they worked under a trade agreement with the union, the two together could rule out the unscrupulous leader, and the conditions would be bettered for both leaders and men. These views, however, are as yet held by but a few. To the historical student it is interesting to see in this belated organization the same forces at work which long since separated the guilds of other crafts into the trade union and the employers' association.<sup>1</sup>

The American Federation of Musicians, as its name indicates, is a federation of local unions rather than a fully developed national union. While the national organization is supreme, yet the spirit of local autonomy is so strong that the delegates have withheld important powers conceded to other national trade unions. The Federation is prohibited from adopting a general benefit or insurance assessment. The revenues of the national are only two

<sup>1</sup> A similar development, completed in the year 1902, is described in the article, "The Teamsters of Chicago," in this *Journal*, May, 1903.



cents a month from each member,—a sum less than one-half the revenue of the 'longshoremens, and only one-twentieth of that of the moulders and one-sixtieth of the cigar-markers. The locals regulate their initiation fees, and a local with high fees assesses the difference on a member admitted by transfer from a local with low fees. That the power of the national organization is growing is seen in the recent rule that this assessment shall not exceed \$25. This was directed against the New York local whose fees are \$100, making the difference assessed to members coming from other locals as high as \$75 to \$95. This question of "universal membership" has agitated the conventions more than any other, and has led to the partial breaking down of local barriers already described. Remnants of the barriers are seen in the rule against "colonizing," by which a local prevents a local leader from bringing in members of other locals for permanent engagements and even for single engagements. Evidently, until universal membership is fully established, the closed shop remains a local monopoly.

Naturally, the local unions of musicians are jealous in admitting members, and the national organization has been compelled to legislate upon this subject. Each local is required to have an examination board to pass upon the eligibility of applicants, but any local rule prohibiting the admission of any competent musician is declared null and void,<sup>1</sup> and the applicant has an appeal to the national executive board. All new locals must hold their charters open for at least one month, and must invite all musicians within their jurisdiction, through the press or otherwise, to become members.<sup>2</sup> Only expelled or suspended members of the Federation are excluded, and these may be readmitted on appeal or by payment of a fine. Members are strictly forbidden to play with non-members, except in the cases already noted.<sup>3</sup>

<sup>1</sup> Constitution, Article V., Section 20. <sup>2</sup> *Ibid.*, Section 1. <sup>3</sup> *Ibid.*, Section 16.



These rules maintaining the closed shop have their significance in view of the wide recruiting area for the supply of musicians. The union necessarily can prescribe no term of apprenticeship. A musician's training begins in childhood, and requires many years of application. Teachers of music are found in every considerable locality, and those who are members of the union are as free as others to organize classes and solicit pupils. In fact, this is a source of income to many of them. Of the thousands who take up instrumental music there are relatively few who come to look upon it as their vocation from which to earn their living. These must be admitted to the union, else their competition on the outside will menace the scale of prices. But there are others to whom music is only an avocation, at which they can pick up a few dollars outside their regular vocation. These, like the women who work at home for "pin money," are the more serious menace to those who depend on their skill for all their money. To bring them into the organization and to bind them to a minimum scale of prices is a decided protection to the professional element. Of the 45,000 members throughout the country, over one-half are working also at other occupations. One consequence of the musicians' affiliation with the trade unions is their rule requiring such members to join also the local union of their regular craft wherever such exists.<sup>1</sup> Thus the musicians offer the peculiar spectacle of a union largely composed of members of other unions and confronted by the problem of maintaining two minimum scales of wages. However, this applies mainly to smaller towns. In such a town, perhaps, only the leader may follow music for his livelihood, while all the other members follow other occupations as well. In such a town the initiation fee is usually \$5,—the minimum prescribed by the national organization. In larger towns the highest is \$25, excepting

<sup>1</sup> Standing Resolution 14.

New York, which in the past five years has placed it at \$100. These larger fees tend to exclude the incidental musician and to reserve the field for the strictly professional.

This competition of semi-musicians has led those who look upon themselves as artists to advocate, in times past, State regulation of the profession instead of trade-union regulation of the craft. They point out that State governments restrict the practice of some professions to those who have passed a prescribed examination, and that this restriction covers not only lawyers, physicians, dentists, pharmacists, and teachers, but also veterinarians, architects, horse-shoers, bakers, and so on. In line with these precedents a bill was introduced in the Illinois legislature creating a "Commission of Music," to be composed of five members selected by the governor from ten persons nominated by the Illinois Music Teachers' Association, with power to grant licenses on examination to teachers of music. Its advocate contended that the low state of their art was due to the many self-styled artists, and that, like other professions, theirs would be improved and elevated by legal selection of the fit and exclusion of the unfit. In lieu of the enactment of such a law the musicians' union tries to reach a similar result through its "closed shop," its examination boards, and its minimum wage. The restrictions which the professional musician advocates for the sake of his art the trade-union musician enacts for the sake of his living. The latter frankly bases his policy on the commercialism which has gained control of the country, and which, on the one hand, sends its greatest of artists "out for the almighty dollar," and, on the other hand, "cheapens the wages of the ordinary musician by the same tactics that employers pursue with other hired help."

This effort to protect the minimum wage is seen in several

of their regulations. One is the exclusion of "juvenile bands." A leader or teacher organizes his pupils and advertises them under a taking or deceptive name. Their parents provide uniforms and instruments, besides paying the teacher a small sum for tuition. After a few months the leader takes contracts, and his pupils play in public for "the experience." This form of child labor is prevented by the exclusion of "incompetent" musicians and of persons under sixteen years of age from membership in the union.

Another rule prohibits co-operative or "share plan" engagements, unless the same are "proven absolutely non-competitive." A co-operative band plays on a speculation for a manager, the pay of the members being a share of the receipts. If such a band comes in competition with a leader who pays the union scale, he may find it difficult to secure the contract. Non-competitive engagements, where such bands may play, are those for practice, or for educational purposes, or for raising funds to buy a uniform, or for creating a class of engagements not in vogue heretofore.<sup>1</sup> In these the band assumes all responsibility, is not engaged, and so does not compete with other bands.

The opposition of the musicians to army and marine bands has come vividly before the public more than any other policy of the organization. Enlisted musicians of the army and navy are not admitted to membership, and a member enlisting severs thereby his membership. No member is permitted to play a paid engagement with any enlisted man. On noted occasions at Baltimore, Chicago, and San Francisco union bands have withdrawn from pageants in which government bands took part. Repeated complaints against their competition have been made to the authorities at Washington, and in this even the National League of "artists" led the way twenty years

<sup>1</sup> Decisions of the President, *International Musician*, February, 1903, p. 2.

ago. The enlisted men are equipped by the government, and are paid a salary somewhat less than the union scale. They are allowed to supplement their salaries by private engagements. In most cases their orders forbid accepting less than prevailing civilian rates, but the National League in 1888 compiled one hundred cases of violation of these orders. The situation illustrates the economist's "marginal man." In St. Louis in 1886 there were five civilian bands and one Cavalry Depot band stationed at Fort Jefferson Barracks. The five bands were at all times compelled to adjust their prices to what managers said they could get the army band for. The one band was a club used in turn on each of the others. Finally, the others adopted a joint defence,—a boycott. This was effective only where the manager needed more than one band or needed one band continuously. Last of all, the Federation appealed from the military and naval authorities to Congress, and now asks for legislation to raise the pay of all members of enlisted bands, "with the unconditional proviso that they shall be prohibited from playing any paid engagements while in the service of the government."

It is significant that the union's antagonism does not apply to navy yard bands. These are composed of local musicians who do not take contracts as a band, but go out as individuals. The antagonism applies only to enlisted musicians, and these, by their oath of service, are under control of the government rather than the union. They cannot be ordered on strike or boycott if their superior officer orders differently. They cannot be summoned to union meetings or examined and punished for cutting under the union prices. They menace the minimum wage because they menace the union discipline.

Immigration, too, is a menace that has troubled the musicians. Though themselves largely foreign-born, especially German, yet they have taken a stand against free

immigration. Even the officers of the National League, in spite of their artists' pride, seriously contended before the immigration authorities that under the alien contract labor law musicians should be excluded, on the ground that they were laborers rather than artists, whom the law admits. The Federation, in line with its trade unionism, consistently urges Congress to class musicians as laborers, thereby bringing them under the alien contract labor law.<sup>1</sup> It declaims against "the wholesale importation of musicians" as "endangering the existence of musicians in this country, and depreciating their opportunities to earn a respectable livelihood as American citizens."<sup>2</sup> It decries the influx of foreign bands, adopting "some high-sounding royal or other foreign title," "picked up in the streets of large cities," managed by some shrewd American, "who lines his pockets by adopting the degrading padrone system of Europe, under which no self-respecting American citizen can exist," and proceeds to declare such aggregations "unfair" and to boycott managers who hire them. It welcomes "legitimate" foreign bands and orchestras making concert tours under fair conditions, "but will resist to the last these fraudulent aggregations."<sup>3</sup> The Federation sent a circular in their own languages to the musicians of Europe warning them against speculators for the World's Fair at St. Louis, and advising them that they would find the cost of living five times as great as in their own countries.<sup>4</sup> Finally, the constitution of the Federation requires all members to be citizens or to have "declared their intention," and to complete their naturalization "with due diligence."<sup>5</sup> Thus the closed shop and the boycott are the musicians' regulation of immigration.

<sup>1</sup> Standing Resolution 10.<sup>2</sup> *Ibid.*, 1.<sup>3</sup> *Ibid.*, 15.<sup>4</sup> *International Musician*, June, 1902, p. 9.<sup>5</sup> Constitution, Article V., Section 8.

*Wages and Hours.*

There is hardly a craft whose earnings are more uncertain than those of the musician. The steadiest job is that in theatres for eight months and summer gardens for four months. In the St. Louis local of 600 members, only about 100 have these positions. There the union scale for theatres provides \$21.25 per week, for not more than nine performances, up to \$24.15, for not more than fourteen performances, to which is added one rehearsal a week. At these prices a musician playing every night in the year, with two matinees and a rehearsal each week, could earn \$1,100. But such a feat is impossible. These men actually earn about \$700 in eight months and \$300 in the summer months, making \$1,000 for the majority of theatrical positions. These, of course, are minimum rates of pay, as are all of the other scales; and there are certain ones, such as first violin, first cornet, and so on, who receive more than the minimum. There are also "extras," so that a few may earn as much as \$1,200. When the St. Louis union was organized twenty years ago, there were three theatres paying the above rates. These were not changed, but the others were raised to the same level, bringing them up about 15 per cent. The best men have always received the higher rates of pay. Their gain has come from regulating the hours, limiting the number of rehearsals, getting paid for extra rehearsals and extra performances, and prompt payment of salaries in full.

The other five hundred musicians in St. Louis must depend for their earnings upon all sorts of fleeting engagements. It is here that the union has mainly affected the rates of pay and the hours of work. The "price-list" covers them all with particularity, and is amended whenever a gap appears. Formerly at private parties, weddings, balls, entertainments, and the like, the pay was \$2

to \$4 for the night. The concessionaire might keep the musicians till daylight, though but a few dancers held out. Now the player gets \$4 till 2 A.M., and \$1 an hour thereafter. Hence the dancers do not remain after 3 or 4 A.M. Parades were \$3 for four hours. Now they are \$4 for the first hour on Sundays, and \$3 on week-days, with \$1 for each additional hour. All day to 7 P.M., or afternoon and evening to 11.30 o'clock, is \$10. Funerals were \$1.50. Now they are \$3 or \$4 "if to a cemetery," or \$5 "with marching after leaving the cemetery." And so on for baseball, Fourth of July, corner-stone laying, flag-raising, dedications, saloon concerts, and the hundred other occasions where the musician softens sorrow, fires patriotism, or drowns bedlam.

Several kinds of calls formerly were not paid for at all, but now they have a scale of prices. Members are prohibited from donating their services unless the union as a whole votes to volunteer, as for some great public service, like the relief of the Johnstown sufferers. Thus church music was often furnished free as an advertisement for other work. Now a single service is \$5, and three services the same day \$10. Decoration Day and memorial services were free on account of sentiment. They are \$4, with marching extra at \$1 an hour. Serenades were free, and a leader could control the time of his men by calling them together when they had "a night off" to serenade a hoped-for patron. Now serenades are \$3 the first hour, with extras for marching and overtime.

The cost of their uniforms is also a matter of wages. Each bandmaster or leader wishes his own uniform, sometimes fantastic and costly. This the musician is often compelled to buy, and so to own, say, four or five different uniforms. The St. Louis local led the way in establishing a regulation uniform, which members are required to wear. It costs about \$18.50, can be made by one's own tailor,



hence is always a fit, avoids contagion, provides a new suit for clear days and indoors and an old one for wet days and parades, and, not least important, enables the public to distinguish between union and non-union bands. A leader may furnish, if he likes, a distinctive suit, or he may furnish only a one-inch band with his own lettering to be placed on the cap. When the Chicago local, in 1905, adopted the regulation uniform, they were checked by an injunction obtained by certain leaders. This, later, was withdrawn, and the union uniform is in line of general adoption.

Curiously, the musician's demands have not lessened his calls. Guests at cafés, restaurants, and hotels were regaled by dirty gypsies or mandolin negroes or other itinerants. Now fifty musicians in St. Louis are regularly employed at \$5 for a single day of seven hours, or \$21 a week of seven days, or a score of other price and time combinations. Trolley parties have appeared. Phonograph musicians in New York dispense harmony to the ends of the earth at \$1.25 an hour. The taste of the community has improved, its wealth and accessibility have grown, and the musician gets more pay and more work.

The foregoing prices and changed conditions pertain mainly to the St. Louis local. In New York the price-list is somewhat higher, and has not been changed for forty years. The difficulty there has been in enforcing the scale. About 300 of the best men earn from \$1,500 to \$2,000 a year, getting steady employment at the minimum scale, while about one in fifty of all the members gets more than the minimum. But the majority earn less than \$1,000, and in some lines, like balls, the competition and evasion have been so great that the scale became a dead letter and had to be reduced.

Although the demand for musicians has increased, yet there is a rule of the national union which carries the sug-



gestion that the doctrine of "making work" has a place in the craft. This law permits a local to specify the minimum number of men allowed to play in a theatre orchestra. The St. Louis local has made but one use of the law, namely, to require the manager of a certain large hall to increase the number of musicians in his orchestra, on the ground that the audience could not hear them. The New York local places the minimum number of men to be employed in a theatre at six, but this absurdly low figure gives evidence rather of the musician's longing to produce artistic music than of his policy to make work. This is shown by the refusal of Henry Irving, on his first appearance in New York, to go on with the regular house orchestra of twelve men, when he had been accustomed in England to forty. He compromised on thirty-five. The union minimum of six is but a feeble effort to counteract the managers' view that the American musician, like the American mechanic, should turn out more work than his European competitors. For Henry Irving's stand in this matter the union made him an honorary member.

Doubtless the idea of making work appeals to some of the locals and some of the members. The New York local fines a member for playing more than one instrument at a time at a single engagement, "this being against the interest of our fellow-members." For the same reason it denounces by resolution the "exactions of unscrupulous leaders who require bass drummers to play cymbals with drum while marching, and snare drummers to play bass drums with pedal attachments on single-night engagements." The musician, like the machinist, clings to the "one-man-one-machine" tradition of his craft. His arguments are right in æsthetics, and may be right in economics, for he reasons that, if the ear of the American public were cultivated to good music, it would demand more music.

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## THE COLLATERAL TRUST MORTGAGE IN RAIL- WAY FINANCE.

ONE of the most important inventions of modern railway finance is the collateral trust mortgage. Devised as a means of evading a statutory limitation to a railroad company's activities, it has become a powerful and, indeed, indispensable instrument for building up great railway systems. During the last twenty-six years there have been about ninety issues of collateral trust bonds, ranging in amount from \$700,000 to \$75,000,000 each, put forth for a variety of purposes, and covering from sixty miles to four thousand miles in a single issue, while a large number of mortgages bearing other names have collateral trust features.

The ordinary railroad mortgage is a direct lien upon the road-bed, track, right-of-way, franchises, real estate, and other tangible property of the corporation. A collateral trust mortgage is a mortgage not upon tangible property or franchises, but upon other mortgage bonds which are direct liens upon property, or upon corporate shares which represent ownership in such property and franchises. Thus the collateral trust bonds issued by the Chicago, Rock Island & Pacific Railroad Company in 1903 are secured by a mortgage upon nearly \$28,000,000 of the common stock of the St. Louis & San Francisco Railroad Company, this stock being held in trust in the interests of the bondholders by a certain trust company. The collateral trust bonds issued by the Illinois Central Railroad Company in 1892 are secured by a mortgage upon the first and second mortgage and income bonds of the Louisville, New Orleans & Texas Railroad Company, similarly held in trust.

An account of the origin of the collateral trust mortgage is of interest because it furnishes an illustration of corporate ingenuity in the matter of doing illegal things in a legal way. The construction of the Union Pacific Railroad, among others, was subsidized by the United States Government, which took a second lien upon all that company's property to secure its loan. In 1873, in order to prevent the impairment of the government's lien, Congress passed a law prohibiting the Union Pacific from increasing the bonded debt of the property subject to this lien. Now railroads are built largely out of the proceeds of bond sales. The result of this law was that the Union Pacific could build no branch lines or extensions under its charter. If built at all, these branches must be built under separate charters and legally distinct companies. But these companies must be controlled by the Union Pacific, or they might fall into the hands of its competitors. Further, the bonds of small subsidiary companies could not be sold directly to the public unless their interest and principal were guaranteed by the parent company, and this the latter could not legally do because that would be placing at least a contingent fixed charge upon its own earnings.

This situation resulted in the Union Pacific 6 per cent. collateral trust bonds of 1879. Legally distinct companies were organized and chartered to build the desired branches. The Union Pacific advanced the funds with which to construct these lines out of its current earnings, and received in compensation the capital stock and first mortgage 7 per cent. bonds of the smaller companies, which thus became subsidiary. To reimburse its treasury for these advances, the Union Pacific mortgaged these first mortgage bonds, and issued and sold about \$7,000,000 of collateral trust bonds against them. The interest on this collateral was more than sufficient to pay the interest on the 6 per cent. bonds, so that, as long as the subsidiary companies

did not default in their interest payments, the charges against the revenues of the parent company were not increased, while at the same time it was getting the benefit of a profitable interchange of traffic with those companies. Thus did the Union Pacific accomplish the feat of constructing, eventually without cost to itself, branch lines which were directly under its control, and at the same time of living up to the letter of the national statute.

Three years later, when the Union Pacific created a second collateral trust issue for a similar purpose, suit was brought by a stockholder to prevent the issuance of the bonds, upon the ground that this really increased the funded burden of the Union Pacific property, and, therefore, was in violation of the national statute. It was shown, however, that the plaintiff, although a stockholder at a time previous to the date of this bond issue, had sold his stock and had not again become a shareholder until after the new bond issue had been authorized. The court decided that he had no right of action, so that the real point of the case was never judicially considered.

The idea of the collateral trust mortgage was probably suggested by the practice, long current among stock brokers, business men generally, and railway companies as well, of borrowing upon corporate securities as collateral. Such debts, in the form of ordinary promissory notes, ran for short periods of thirty or sixty days only. The question is naturally suggested, If such collateral is adequate security for ordinary commercial paper, why would it not also be adequate security for long-time loans?

The collateral trust mortgage soon became popular and was used for a variety of purposes. The most important of these have been to fund floating debts, acquire control of connecting railroad lines, and to finance new construction. Out of seventy collateral trust issues about which

inquiry has been made for the present investigation, eleven have been made for the first of these purposes,—funding troublesome floating debts. Some of these have been due to the misfortunes of the railroad company, some to new construction for which funded obligations had not yet been created, some to both. Thus poor crops in Kansas and Nebraska in 1886 and 1887, strikes and general labor agitation, caused the Atchison, Topeka & Santa Fé to incur a floating debt of \$5,000,000 in 1888. A strike, a flood, assisted by a general business depression, caused the Baltimore & Ohio Southwestern a floating debt of over \$1,000,000 in 1897. The Richmond & West Point Terminal Railway and Warehouse Company repeatedly piled up floating debts because of the general unprogressiveness and lack of efficiency in the management of the railways which it controlled. Illustrations of floating debts due to construction were those of the Central Railroad and Banking Company of Georgia in 1887, and of the Missouri Pacific prior to 1895. The former piled up a 6 per cent. floating debt of \$1,050,000 in building roads in South Carolina, and funded this into a 5 per cent. collateral trust mortgage. The Missouri Pacific had been building railroads with materials bought on account or on commercial paper. All of the floating debt thus created had been bought up by Jay Gould, Russell Sage, and other directors, and held by them subject to call. This debt resulted in the Gold Funding Notes of 1895.

The manner in which this method of funding floating debts becomes available may be illustrated by the case of the Richmond & West Point Terminal Company in 1883. That company had acquired control of a network of railways in Virginia, Tennessee, Georgia, and the Carolinas, by purchasing their capital stock and bonds. Almost invariably these had been obtained in exchange for

its own capital stock, so that these securities of subsidiary companies lay in the Terminal Company's treasury, unencumbered by any mortgage. When the company found itself burdened with a large floating debt in 1883, it relieved itself by pledging a great mass of these shares and bonds as security for its 6 per cent. two-year collateral trust notes.

The old Wabash, St. Louis & Pacific funded a similar floating debt in 1883. That company had been seized with the mania for expansion. Organized in 1879, it had in three years' time increased its mileage from 1,578 to 3,518 miles, its debt from thirty-five to seventy millions, and had accomplished this partly by construction under subsidiary companies, mostly by annexing all the odds and ends of railway lines lying loose in its vicinity. In the same process it had collected a large and miscellaneous mass of railway securities in its treasury. Aided by destructive washouts, poor crops, and the poor condition of the roads acquired, it had piled up a floating debt of over \$5,000,000. About \$18,000,000 worth of these stocks and bonds were bundled together under a collateral trust mortgage and \$10,000,000 of 6 per cent. notes issued against them, part of which was to provide for this floating debt and part to pay off certain car trust certificates which were to mature during the ensuing nine years.

These bonds of the Wabash were to run thirty years. Usually, however, the securities issued to take up a floating debt have a period of only three or four years, and are called collateral trust notes. The Richmond & West Point Terminal notes of 1883 matured in 1885, and were converted into another collateral trust issue bearing 7 per cent., and maturing in 1887; the Atchison notes of 1888 were to run only three years; the Union Pacific Collateral Trust Notes of 1891, three years; those of the Northern Pacific of 1893, five years.

The reason for the temporary nature of these issues is apparent. They are created when the railway company is in financial distress, when its credit is poorest. Consequently, these notes must either bear high interest rates or sell at a large discount, or both. The first collateral trust loan of the Richmond & West Point Terminal in 1883 bore 6 per cent., and was negotiated at 90, representing a cost of 11 per cent. per annum. Its successor in 1885 bore 7 per cent. The Atchison notes of 1888 bore 6 per cent., and netted the company 97½. The Union Pacific notes of 1891 bore 6 per cent., and were taken at 92½, representing a cost of 8 per cent. per annum. The railway company feels that by tiding over the temporarily unfavorable condition of its finances it can place its long-time securities at lower interest rates. Hence these short-time notes.

So much for the floating debt as leading to this form of security. A more important purpose of the collateral trust mortgage is to serve as a means of acquiring control of connecting lines. There are three ways in which this may be accomplished, namely: (1) one railroad company may purchase a controlling interest in the securities of a second company, paying for them in cash, and reimburse itself by mortgaging the securities thus purchased and selling collateral trust bonds against them; (2) the purchasing company may exchange its collateral trust bonds directly for the desired securities of the second company, and deposit these securities obtained in the exchange under the collateral trust mortgage; (3) the trustee of the mortgage may sell the collateral trust bonds on the market, and with the proceeds purchase the desired securities of the connecting lines, and deposit them under the mortgage.

The first method, the cash purchase, will usually be followed when there is reason for a quick purchase of the



desired securities. Thus, during the panic of 1893, the preferred and common stock, the second mortgage and equipment trust bonds of the Chesapeake, Ohio & Southwestern took a sudden and large drop. The Illinois Central snatched them up at their low prices, at the same time buying that company's floating debt and overdue interest coupons, and thus obtaining control. This move gave the Illinois Central an outlet from Memphis toward the North-west for the traffic coming up over its Yazoo & Mississippi Valley Division, and also connected that division of its system with the main line at Fulton, Kentucky. The Illinois Central reimbursed itself for these cash appropriations by selling an issue of collateral trust bonds secured by a mortgage upon the Chesapeake, Ohio & Southwestern securities.

Again, in 1892, the Illinois Central purchased \$35,236,000 of the mortgage and income bonds of the Louisville, New Orleans & Texas Railroad, which paralleled its Yazoo & Mississippi Valley Division. By the terms of the agreement it was required to pay \$5,000,000 of the purchase price in cash. To pay the remainder of the purchase price of \$25,000,000 and to reimburse itself for this cash payment, the Illinois Central mortgaged the securities purchased, and issued \$25,000,000 of collateral trust bonds against them.

In other cases the companies owning the desired connecting lines may have only a small amount of securities outstanding, so that these may be purchased for cash without inconveniently draining the purchasing company's treasury. The Reading Company in 1899 purchased most of the \$1,500,000 capital stock of the Wilmington & Northern at from \$40 to \$50 per share (\$50 par value), and reimbursed itself in the following year by an issue of \$1,300,000 of 4 per cent. collateral trust bonds.

A more common practice in acquiring control of con-



necting lines is to exchange the collateral trust bonds directly for the stocks and bonds which are desired, and which become the security of the collateral trust bonds. This exchange is made at a fixed ratio stated in terms of the par value of the two sets of securities, usually offering the holders of the desired securities a little more than the market price of their holdings at the time. Thus, in 1902, the Chicago, Rock Island & Pacific Railroad Company, wishing to acquire the capital stock of the Chicago, Rock Island & Pacific Railway Company, offered the holders of that stock its collateral trust 4 per cent. bonds, together with the common and preferred stock of the Rock Island Company of New Jersey, in the ratio of \$100 in bonds, \$70 in preferred stock, and \$100 in common stock for each \$100 of capital stock of the Railway Company. The Railway Company's stock, which had been paying 5 per cent. dividends, had risen in market price from 135 in July, 1901, to 170 in June, 1902, and thence to 200 later in the year. The securities for which these stocks were exchanged guaranteed their holders 4 per cent. on the par value of their investment in the form of interest on the collateral trust bonds, an additional 2.8 per cent. if earned as dividends on the preferred stock, in all a possibility of 6.8 per cent., and gave them a bonus of common stock. Rock Island Company's preferred stock commenced paying 4 per cent. dividends in 1903; but its ability to continue this is contingent upon the old Railway Company's ability to continue paying more than 7 per cent. dividends on its stock, which, in view of the present inferior condition of its property, is improbable.<sup>1</sup>

Again, in 1902, to acquire the stock of the Choctaw, Oklahoma & Gulf Railroad, the Chicago, Rock Island & Pacific Railway Company offered the holders of that stock

<sup>1</sup> Since the above was written, the Rock Island Company has been compelled to reduce the dividend on its preferred stock.

its 4 per cent. collateral trust bonds at the rate of \$80 in bonds for each 50-dollar share of Choctaw common, and \$60 in bonds for each 50-dollar share of Choctaw preferred. The preferred stock had been paying 5 per cent. dividends since 1898, and the common from 2 to 4 per cent. This was not in itself an attractive offer to the preferred shareholders; but they had either to accept this offer or furnish large amounts of funds for betterments and extensions, besides withstanding the competition of a parallel line which the Rock Island threatened to build if they refused this offer. They accepted.

The third method of purchasing the securities of another railway company is illustrated in the Richmond & West Point Terminal mortgage of 1887. The "Terminal Company," which had hitherto been subsidiary to the Richmond & Danville, wished to acquire the \$6,000,000 of First Preferred Stock of the East Tennessee, Virginia & Georgia and a controlling interest in the Richmond & Danville stock, and thus to become the parent company. For this purpose \$4,400,000 in cash was required, in addition to 40,000 shares of the "Terminal" Company's stock. To obtain this cash and fund a floating debt, a mortgage for \$8,500,000 was placed upon a list of stock and bonds, including the "East Tennessee" and the Richmond & Danville stock about to be purchased, the list amounting to \$21,416,000. The collateral trust bonds thus secured were delivered to a syndicate in exchange for the necessary cash funds, the syndicate reimbursing itself from the sale of the bonds. In other cases the trustees of the mortgage sell the bonds, and from the cash proceeds purchase the desired railway securities, and hold them subject to the mortgage.

So much for the methods of purchasing the securities of connecting railroads. Twenty-nine out of about seventy collateral trust issues were created wholly or in part for

this purpose. Other methods of acquiring control of connecting lines are through the lease of their roads, consolidation, and common personal ownership of the stock of the two companies. The lease is the most common. But, if a fixed rental is paid for the leased line, this becomes burdensome to the lessee if the acquired line should prove unprofitable or during times of depression. If the rental be a fixed percentage of the gross or net earnings, thus fluctuating with the prosperity of the leased line, this in practice has been found to discourage improvements by the lessee upon the leased property, because the lessee will not get the whole benefit of such improvements. As a result, many companies are supplementing their leases by purchasing the stock of the leased lines, or are purchasing this stock and cancelling or refusing to renew their leases. The Illinois Central adopted the latter course in dealing with its Iowa lines in 1887. The Mobile & Ohio, in 1900, supplemented its lease of the St. Louis & Cairo Railroad by purchasing that company's stock under a collateral trust mortgage. Very frequently a railway company, after obtaining a controlling interest in the stock of a connecting line, will also lease its road. This enables the parent company to operate the leased road as an integral part of its system.

In "consolidation," as the term is here used, one company loses its identity, its property being sold to the other company in consideration of the assumption of its debts by that company, or distributed to its stockholders, which consist of the parent company. The method of consolidation is rarely followed in practice. It has the advantage of simplifying accounts by avoiding the necessity of keeping a distinct set of accounts for each part of the system. But a connecting line may become a burden instead of a blessing to the system, and under consolidation there is no way in which to remove such a burden except

insolvency and reorganization. Whereas, if control is exercised through stock ownership, the burdensome line may be dropped off by redeeming the collateral trust mortgage and selling the underlying securities.<sup>1</sup> Further, consolidation may lead to legal complications. There is always that danger that the courts will declare the consolidation illegal; and, since a case testing its legality may not come up at once, but several years later, when everything has been adjusted to the new order, it is considered advisable not to resort to this method of control. Finally, in case a consolidation were not declared illegal, there is still grave doubt as to the charter rights of the consolidated company. Thus the present Chicago, Rock Island & Pacific Railway Company was a consolidation of the former Chicago, Rock Island & Pacific Railroad Company, an Illinois company, and the Mississippi & Missouri River Railroad Company, an Iowa corporation. The laws of Illinois forbid a railroad company from purchasing and owning the stock of another corporation, the laws of Iowa permit it. What rights are possessed by the present "Rock Island" Railway Company, which is a corporation under both sets of laws? Does it possess the most liberal privileges conferred by each charter or the least liberal? As a matter of practical policy, the solicitors of the company will claim all the privileges they ever enjoyed under either charter; but there are abundant opportunities for legal complications.

Control through common personal ownership in the stock of two or more railway companies was, until recently, illustrated in the method by which the Vanderbilt system was held together. The parts of this system, including the New York Central, the Lake Shore & Michigan Southern, and the Michigan Central, were operated in harmony

<sup>1</sup> This is not true, however, if the interest on the subsidiary company's bonds or dividends on its stock be guaranteed by the parent company.

because the Vanderbilt family held a controlling interest in the share capital of each company. This has its disadvantage in that the death of a single individual may cause the break-up of the whole railway system. In 1898 and 1900 the New York Central purchased the Vanderbilt holdings in the stock of the other two companies, and as much of the remaining stock as was offered, paying for them in  $3\frac{1}{2}$  per cent. collateral trust bonds secured by the stock purchased.

This case illustrates a third purpose for which collateral trust bonds may be issued; namely, to more firmly cement the parts of a railway system together. In this case common personal ownership was converted into corporate ownership. In other cases separate holding companies may be organized to acquire and hold the securities of connecting lines. The old Richmond & West Point Terminal Company, which was organized in the interests of the Richmond & Danville, was an instance of this kind. Or, as in the case of the Erie Railway's purchase of the New York, Susquehanna & Western and several other companies in 1901, the collateral trust mortgage may be the means of converting close but informal working agreements with connecting lines into actual control.

We come now to the most important purpose for which bonds in general have been issued, and the purpose second in importance for which collateral trust bonds have been issued. That purpose is the financing of new construction. The general practice in building extensions and branch lines nowadays is to construct these under separate charters. But, instead of selling the securities of the new railway company upon the market, these securities are issued to the parent company, and the latter places upon the market its own collateral trust bonds secured by a mortgage upon these stocks and bonds of the subsidiary

company. This course secures the necessary construction funds as readily and insures to the parent company the control of the new lines.

In practice this method works itself out in two variations. The parent company either advances the necessary construction funds out of its own treasury in exchange for the securities of the subsidiary company, and later reimburses itself by the sale of collateral trust bonds, or, in advance of construction, it gives its collateral trust bonds to the subsidiary company in exchange for the latter's stock and bonds; and the subsidiary company then obtains the needed construction funds by selling the collateral trust bonds thus received.

The collateral trust mortgage issued by the Union Pacific in 1879, already referred to as probably the earliest issue of the kind, was an instance of the first variation. The \$14,376,000 of Trust Five Per Cent. Bonds of the Missouri Pacific Railway in 1887 was another instance, and were secured by the first mortgage bonds of seven subsidiary companies. A similar collateral trust mortgage of 1890 was secured by the bonds of nineteen subsidiary companies which were built in this way. The Illinois Central and the Louisville & Nashville are also among railroad companies which have financed new construction in this way.

This variation has the disadvantage of entailing a considerable drain upon the earnings and working capital of the parent company, perhaps impairing its working efficiency, and especially diverting funds which might have been paid out in dividends to other purposes. And in practice it seems to be less favored than the second variation, namely, the exchange of securities with the subsidiary companies and the sale of the collateral trust bonds in advance of the construction work.

The latter has been a favorite method with the St. Louis & San Francisco, that company having put out four issues

of collateral trust bonds in this way. Other railway companies which have followed this method are the Burlington (1881), the Rock Island (1884), Illinois Central (1886), the Atchison, and the Union Pacific. This method was also followed by the Pennsylvania Company in putting out its Guaranteed Trust Certificates in 1897 and following years. By following this method the drain on the parent company's treasury is reduced to a minimum; namely, the interest upon the bonds issued.

The reasons for financing new construction by means of collateral trust issues are various. To construct new lines under the parent company's charter would often mean that they would automatically become subject to old mortgages. This means that new bonds issued would have a junior lien, and, as the *Commercial and Financial Chronicle* puts it, an investor prefers a first lien upon a specific piece of property to a tenth or twelfth mortgage upon a whole system. If subsidiary companies are organized, these must be controlled either through the lease of their lines or through stock ownership. The first mortgage bonds of the subsidiary companies might be offered directly to the public; but the investor prefers a bond which, in addition to being a first lien upon a specific piece of property, is a direct obligation of the parent company. The collateral trust bond has both of these desirable qualities, and gains additional strength from the fact that frequently the same bond is thus indirectly a first lien, not upon one branch road only, but upon several, thus widening the security. As in insurance, there is safety in numbers.

Again, as already intimated, the control of connecting lines through stock ownership is a possible advantage in that it may enable the latter to rid itself of such lines if they prove unprofitable. Sometimes a subsidiary company can obtain valuable charter privileges. The Rock



Island built the road of the Wisconsin, Minnesota & Pacific under an old charter which exempted its stockholders from the liabilities imposed by the States through which its lines passed.

But the most important reason for constructing additional mileage in this manner consists of the limitations of the parent company's charter privileges. In the first place, a railway company's charter will pretty definitely fix the location and length of the road which may be constructed by it. Thus the Illinois Central's charter empowered it to construct a railroad from Cairo, Illinois, through the central part of the State, to the north-west angle via Galena, and a branch from Centralia to Chicago. If that company wished to construct other mileage within the State, it might be enabled to do this through an amendment to its charter; but in these days of hostility toward corporations it might have to surrender some other valuable charter privilege in exchange for the desired amendment. Further, the powers granted to a railway company in its charter hold only within the boundaries of its birth State; and, if it wishes to push its lines into other States, as all great railway systems do, these lines must be built under separate charters obtained under the laws of the States in which they lie. Hence a great railway system must consist of the lines of a number of smaller or of larger companies all of which are controlled in some way by one great "parent" company. As shown before, where these subsidiary companies sell bonds,—and they usually do,—these bonds will command better prices if they are represented in the market by the parent company's collateral trust bonds.

The foregoing three purposes—namely, funding floating debts, purchasing control over connecting lines, and financing new construction—are the principal purposes



for which collateral trust mortgages have been created. Of these, the last two, which together represent the building and development of railway systems, are *par excellence* the purposes of the collateral trust mortgage. Fifty out of about seventy such mortgages have been created, wholly or in part, for one of these two purposes. The funding of floating debts comes next with eleven such issues to its credit. A few of the more important minor purposes are illustrated in the following paragraphs.

One such purpose of the collateral trust mortgage is to market the companies' securities on more favorable terms than could be obtained otherwise, either by postponing the sale of long-term bonds until market conditions become more favorable or by combining a number of different bond issues and strengthening their security, to give strength to the combination. In the first case the new issue usually takes the form of collateral trust notes which bear a higher rate of interest than the underlying securities and are exceeded by them in par value. Thus the Baltimore & Ohio Southwestern had sustained during 1896-97 a series of disasters which impaired its earnings, so that its First Consolidated  $4\frac{1}{2}$  per cent. bonds had declined from 79 to 60. Being in need of funds with which to repair the damages to its track, that company deposited a number of these  $4\frac{1}{2}$  per cent. bonds as security for \$675,000 of notes which were turned over to a syndicate in exchange for the needed funds.

On the border between this and the next case are the several collateral trust issues put out by the Seaboard Air-Line Railway Company between 1900 and 1903. The Seaboard Air-Line Railway Company had authorized in 1900 a \$75,000,000 issue of 4 per cent. bonds which were a first lien on 350 miles of railway, and a direct mortgage on 1,010 miles of other road, subject to outstanding prior lien bonds amounting to \$12,748,000, and was a consoli-

dated lien on the remaining mileage of the Seaboard system. The security was not strong enough to sell the bonds. Consequently, as funds were needed, three successive collateral trust issues were substituted. In each of these there was deposited an amount of the unsalable "First Fours," just double the amount of the collateral trust notes or bonds authorized. Two of these collateral trust issues bore 5 per cent. and one 6 per cent. as compared with the rate of 4 per cent. on the underlying bonds. The collateral trust bonds sold at from 100 to 105 as compared with a price of 82 to 90 on the underlying bonds. The Chicago & Alton Railway Company did a similar thing in 1902, issuing \$5,000,000 of 4 per cent. notes against \$7,000,000 of 3 per cent. Refunding Bonds of the Chicago & Alton Railroad Company.

In 1898 the Louisville & Nashville's Unified Four Per Cent. Bonds were selling at from 80 to 90. Wishing to pay off over \$7,000,000 of First Consolidated Mortgage Bonds which matured that year, the Louisville & Nashville placed a twenty-year mortgage upon \$14,000,000 of these Unified Fours and \$4,000,000 of Paducah and Memphis Division bonds, and issued 4 per cent. collateral trust bonds against them. These bonds sold around par. The Louisville & Nashville collateral trust bonds of 1882 were issued for a similar purpose. In this case \$10,000,000 of 6 per cent. bonds were issued against \$28,163,000 par value of a varied list of bonds, and sold at 90.

Still another purpose of collateral trust bond issues is the reduction of fixed charges. This may be done by converting flexible rentals into fixed interest rates. Thus, in 1900, the Mobile & Ohio purchased the stock of the St. Louis & Cairo, whose line it had leased at a rental amounting to 25 per cent. of  $\frac{11}{16}$  of its gross earnings, thus substituting a fixed interest charge for this flexible rental. Or bonds with a low rate of interest may be substituted

for preferred stocks with fixed dividend rates. Thus the  $3\frac{1}{2}$  per cent. Guaranteed Trust Certificates of the Pennsylvania Company take the place of the 7 per cent. special stock of the Pittsburgh, Ft. Wayne & Chicago, which dividend is guaranteed by the Pennsylvania Railroad.

Three other purposes of collateral trust issues need only be mentioned. These are: (1) to refund previous issues of bonds; (2) to convert a previous bond issue for the purpose of increasing its authorized amount; and (3) to consolidate and unify the mortgages of railroad companies which enter into consolidation. The usual method of accomplishing each of these purposes is by means of a consolidated or general mortgage. The use of the collateral trust mortgage in this way is very exceptional.

So much for purposes of collateral trust mortgages. We may now consider such important features as the provisions in these mortgages for future needs of the railroad company, their interest rates, their security, and their value as investments.

The first of these may be passed over with the observation that collateral trust mortgages do not usually provide for the future needs of the railroad company issuing them, as is now done in all large mortgages which rest directly upon physical property, and need not do so. In exceptional instances this is done. The Southern Pacific Company's collateral trust mortgage of 1899 provided \$28,818,500 for the immediate purchase of the common and preferred stock of the newly reorganized Central Pacific Railroad, and \$8,000,000 for the purchase of preferred stock subsequently to be issued. Five million of this additional Central Pacific preferred was issuable at the rate of only \$200,000 annually for improvements. Thus this collateral trust mortgage provided for certain betterment needs of the subsidiary Central Pacific Railroad for

a period of twenty-five years to come. But this is exceptional, and its purpose was to insure to the Southern Pacific Company the control of all the Central Pacific stock, the issuance of which was provided for in the latter's plan of reorganization.

Provisions for the remote future are not necessary in collateral trust mortgages to the same extent as in consolidated and other direct mortgages. Only one consolidated or general mortgage can be placed upon a railway system; for, since it rest upon the whole or the greater part of the property of the system, any subsequent mortgage must have an inferior lien. Hence such mortgages must contain provision, not only for the immediate, but also for the more remote future. Collateral trust mortgages represent railway lines which have been constructed under separate charters. Whenever more such lines are needed, a new collateral trust mortgage may be created. The number of such mortgages is limited only by the needs and utility of additional branch lines and connections.

In discussing interest features of these mortgages, we may make two comparisons: (1) we may compare the interest rates of the collateral trust bonds with those of the underlying securities; (2) we may compare the interest rates of the collateral trust bonds with those of other bonds of the same company put out at about the same time.

First, the interest rates of collateral trust bonds compared with those of the underlying securities. Collateral trust notes and bonds which are issued to tide over temporarily unfavorable market conditions for the underlying securities usually bear a higher interest rate than does the collateral and have a much smaller par value. Thus the three Seaboard Air-Line Railway collateral trust issues of 1901, 1902, and 1903, referred to above, bore 5 and 6 per cent. as compared with 4 per cent. on the Seaboard "First Fours," which were their security; and their total

par value was half that of the First Fours deposited under them.

The interest rates on collateral trust bonds issued for other purposes sometimes equal the rate on the underlying collateral, but are usually less. The \$25,000,000 of Union Pacific 6 per cent. notes of 1891 were secured by a deposit of over \$39,800,000 par value of 5, 6, and 7 per cent. first mortgage bonds, and over \$58,500,000 of railway stocks and miscellaneous securities. These notes were issued during financial distress. Usually the excess of interest on the underlying collateral will be used as a sinking fund. The Chicago, Rock Island & Pacific Railway collateral trust 5's of 1884 and following years were secured by an equal amount of 6 per cent. bonds of subsidiary companies constructed under this mortgage. Five-sixths of the interest on the underlying securities paid the interest on the collateral trust bonds, the remaining one-sixth was to be invested in the collateral trust bonds themselves.

This difference between the interest rates on bonds and their collateral cannot be considered a saving to the company in such cases, because it was never contemplated that the underlying securities should be sold. The interest rates on this collateral were purposely made higher to create a sinking fund. In certain cases, however, collateral trust bonds have been created for the express purpose of saving in interest charges, by converting bonds with higher rates, or by converting the rentals on leased lines into low interest payments.

The second and more important consideration is, How do the interest rates on these collateral trust issues compare with the interest rates of other bond issues of the same company put out at about the same time? The nominal interest rates on collateral trust bonds have been about the same as those of other bond issues. They were 6 and 7 per cent. about 1880, 5 per cent. in the later '80's,

and are tending downward toward  $3\frac{1}{2}$  per cent. But of two bond issues put forth by the same company at about the same time, one being collateral trust, the other having a direct first lien upon railway property, the direct lien will usually command the higher price. Thus the  $3\frac{1}{2}$  per cent. collateral trust bonds of the New York Central, issued in 1898, were worth from 93 to 99 in 1900, and those issued in 1900 were worth from 94 to 98, while the  $3\frac{1}{2}$  per cent. Refunding Mortgage Bonds of 1897 were worth from 108 to 111. The Erie 4 per cent. collateral trust bonds of 1901 sold at from  $92\frac{1}{2}$  to  $96\frac{1}{2}$ , while at the same time the 4 per cent. Prior Lien Bonds of 1895 were selling at from  $95\frac{1}{2}$  to 101. The Chicago, Rock Island & Pacific Railway 4 per cent. collateral trust bonds of 1902 sold at 98 for those maturing in 1904, and at from 82 to 95 for those maturing in 1918, while at the same time the 4 per cent. General Mortgage 100-year Bonds of 1898 sold at from 99 to 108.

An explanation of this unfavorable view of the collateral trust bond is found in its security as compared with the security of direct mortgages upon property. The test whereby to judge this is the comparative treatment received by collateral trust and other issues in times of corporate insolvency and reorganization. But this gives varying testimony. The Philadelphia & Reading collateral trust bonds of 1892 were undisturbed in the subsequent reorganization, and were eventually converted into the new "General Mortgage Fours." In this case the income from the underlying collateral was more than sufficient to pay the 5 per cent. interest on the bonds. In the voluntary reorganization of the Atchison in 1889, the collateral trust issues of 1880, 1881, and 1887, each, with one exception, received 100 per cent. in new 4 per cent. consolidated mortgage bonds, besides bonuses of from 20 to 56 per cent. in new 5 per cent. income bonds. The one exception, a  $4\frac{1}{2}$  per cent. issue, received 85 per cent. in new 4 per cent.

mortgage bonds, and 22 per cent. in new incomes. Several of the old 7 per cent. first mortgages received only 100 per cent. in the new Consols and 60 per cent. in new incomes, while the 5 per cent. first mortgages received only 85 per cent. in Consols and 32 per cent. in incomes. This, however, was a voluntary reorganization, and the test of actual insolvency was lacking.

In the reorganization of the Union Pacific in 1896 the collateral trust issues of 1879, 1883, and 1889 were omitted from the reorganization plan, the mortgages under them having been foreclosed separately and the railways represented by them torn from the Union Pacific system, while the principal 6, 7, and 8 per cent. first mortgage bonds of the Union Pacific received 100 per cent. in new 4 per cent. prior lien bonds and 50 per cent. in new preferred stock. The cause of this dismemberment was the difficulty experienced by the Reorganization Committee with the United States Government in regard to the adjustment of its second lien against the property. This difficulty caused a delay of several years; and in the mean time the collateral trust bondholders felt compelled to take independent action in order to save themselves. Eventually, in 1898, these properties were restored to the Union Pacific system. The holders of the 5 per cent. issue of 1883 received \$978.89 on account of the principal and matured interest of each bond, while the holders of the 6 per cent. issue of 1879 realized in full upon their principal and interest.

The Wabash, St. Louis & Pacific 6 per cent. collateral trust bonds of 1883 were subsequently converted into a little more than their par value of 6 per cent. Debenture "B" Bonds, the holders paying 2 per cent. in cash upon the face of the debentures received. These bonds later sank to a merely nominal value. The general mortgage bonds of the old Wabash received precisely similar treat-



ment, however. As before stated, the Wabash, St. Louis & Pacific, owing to its policy of rapid expansion by indiscriminately annexing all the loose odds and ends of railway lines in its vicinity, was in a very poor condition not only financially, but physically. The branches which were represented in the collateral trust bonds were very low in earning power. Again, in the reorganization of the old Richmond & West Point Terminal and Richmond & Danville systems in 1894, which resulted in the present Southern Railway Company, the "Terminal" Company's collateral trust 6's of 1887 received 35 per cent. in new 5 per cent. consolidated mortgage bonds and 90 per cent. in 5 per cent. non-cumulative preferred stock, while the collateral trust 5's of 1889 received 70 per cent. in new preferred stock and 30 per cent. in common stock. These old systems were also in very poor condition. The roadbeds were grown up to weeds, the wooden trestles rotten, the rolling stock was antiquated, some of the locomotives being survivors of *ante-bellum* times, while the books showed such assets as "Fire, \$47,000," "Bills Receivable, Worthless, \$50,000." There was no adequate security to any of those companies' obligations, and all bond issues suffered severely in the reorganization.

Generally speaking, in times of insolvency and reorganization all bond issues stand on their commercial rather than their legal merits. Legal position does count in the case of two or more successive mortgages on identically the same property, and in such cases the reductions of interest or principal are usually borne by the junior bondholders. But in a contest between independent mortgages upon different portions of a railway system—first mortgages upon the main line, various branches, terminals, and equipment, say—the case is different. If the net earnings of the subsidiary company plus the net income which accrues to the parent company from its interchange



of traffic with its subsidiary company are more than sufficient to pay the interest on the latter's bonds, then they are secure, whether they be first or second mortgage bonds; for to allow such mortgages to be foreclosed, and thus dismember the system, would reduce the earning power of the parent organization, and, therefore, its ability to pay interest even on its first mortgage bonds. The same observation applies to terminal and equipment trust bonds. What advantage is it to have a main line, if there are no branches to bring it traffic, no rolling stock to carry this traffic, and no terminals in which to handle it? And, if control of important branch lines be represented by collateral trust bonds, these bonds are perfectly secure. Indeed, they might reasonably come ahead of the first mortgage bonds of the main line if it came to a trial of strength.

If, however, the contributions of a subsidiary company's traffic to the parent company's net earnings, when supplemented by the former's own net earnings, are not sufficient to pay the interest on the subsidiary's company bonds, then these must suffer a reduction of interest or principal, or both. And, if they be represented by the parent company's collateral trust bonds, these must suffer also. Thus a collateral trust issue must stand on its own commercial merits, in a reorganization, the same as issues secured by other types of mortgages. If it represent branches or lines which are essential to the system, its position will be strong. If not, it will be weak.

A weak collateral trust mortgage, however, is more weak than a similar direct mortgage. For, if its collateral consists of mortgage bonds, its own foreclosure is not sufficient to give possession of the physical property; but often many individual underlying mortgages must also be foreclosed. This involves not only great expense, but a long legal delay, during which the physical condition of the property may be deteriorating, so that, when this

property finally comes into the hands of the collateral trust bondholders, its value has been greatly impaired.

If the collateral consists of stock, the value of the bond may be impaired while the system is yet solvent, but perhaps tending toward insolvency through the fact that the parent company may, through its right to vote the subsidiary company's stock, load the latter's property up with mortgages which, of course, come ahead of the stock. In recent collateral trust mortgages, however, attempts are made to avoid this contingency by limiting the parent company's power to place such liens ahead of that of the collateral trust bondholders.

The other contingency—delay—is also avoided in some recent mortgages by empowering the trustee to sell the collateral without foreclosure. The advantage of this provision is illustrated in the case of the Union Pacific 6 per cent. notes of 1891 (which were not secured by mortgage, but merely by an agreement). In the subsequent reorganization these notes received not only their face in cash, but a bonus of 15 per cent. in the preferred stock of the new company as well. Their collateral, however, represented the control of nearly all the smaller branches of the Union Pacific system, and were essential to its success. The recent collateral trust issues of the Rock Island and the New York Central possess the same feature, and this ought to place such issues in better confidence.

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## THE SWISS NATIONAL BANK.<sup>1</sup>

IN an article published in this *Journal* for April, 1898, entitled "The Bank Note System of Switzerland," Mr. A. Sandoz gave an account of the historical development of the Swiss issue-bank question. The article concluded with the recital of the rejection, at the referendum of February 28, 1897, by 255,984 voices against 195,764, of the law of June 18, 1896,—a defeat which involved the fate of the State Bank.<sup>2</sup>

Immediately after the referendum of February 28, 1897, two measures were proposed, each of which had in view the erection of a central bank of issue. Both demanded for the bank a legal personality independent of the state, the alternative of a pure state bank having been decisively defeated by the people. On the basis of these two propositions and with expert advice, the federal councillor Hauser prepared a second bill, in which, none the less, the preference of the author for a pure state bank was unmistakably evident. Numerous differences as to the business scope of the institution, the right of accepting interest-bearing deposits, the maximum dividends, the duration of the period of transition, and especially as to the site of the main office, had to be reconciled in the legislative session of June, 1901. An agreement upon all points, with the exception of the last, was reached between

<sup>1</sup> Translated from the German manuscript by W. H. Price.

<sup>2</sup> For a detailed study consult Landmann, *Das schweizerische Bankgesetz. Untersuchungen zur Geschichte und Kritik der schweizerischen Notenbankgesetzgebung*. . . . Zürich, 1905. This contains a complete bibliography of the Swiss bank question since 1860. See also articles by W. Speiser in the *Revue économique internationale*, iv, No. 3, p. 539, and P. Gyax in *Jahrb. für Nationalök. und Stat.*, III Folge, 30 Band, p. 721.

the two chambers. With respect to the location, agreement was impossible. The National Council (*Nationalrat*) on the 27th of June, 1901, declared its designation of Berne as the chief site of the bank to be final; and when, on the 28th of June, the Council of States (*Ständerat*) just as emphatically declared for Zürich, the proposed measure was wrecked. This rivalry was largely a pretext for disposing of the bill in the parliamentary deliberations, in order to prevent another referendum with its accompanying bitterness.

We come now to the project which finally succeeded. In place of Mr. Hauser (meanwhile deceased) whose adherence to the state bank idea had really wrecked the second bank project, another federal councillor, Comtesse, undertook the direction of the finance department of the council. With a right understanding of the fact that the suitability and efficiency of a central banking institution depended not on the external model, but on internal arrangement and organization, he endeavored to unite the majority at least of the conflicting interests. Before the project of a new bank act could be prepared, it was necessary, in order to proceed with safety, to dispose of the obstacles upon which the previous proposals were wrecked. If we inquire as to the dangers which threatened any bank project, either state or private, we must direct our attention to the following groups of opponents.

First of all there were those uncompromising opponents who vote "no" on principle at every referendum, and whose strength was estimated at about 150,000 votes. There was no possibility of winning these by any concessions in the law.

Next there were the adherents of the federation system (particularly in French Switzerland, but numerous also in certain quarters of German Switzerland) who feared

the federal bank as strengthening the central authority. Here the prospects for assent were more promising. Commercial and industrial expansion has proved more powerful than provincialism. Economic interests and growing political intelligence constantly tend to obliterate local jealousies and the fear of centralization.

With the third group the objections were on behalf of the financial interests of the cantons,—apprehensions of a diminution of cantonal revenue resulting from the decline of earnings of the cantonal banks and a loss of cantonal taxes on bank-notes. The cantons have been passing through a serious financial crisis, and therefore any project, to be successful, would have to indemnify their treasuries for the loss of revenue arising from the centralization of note issue. Article XXXIX of the constitution, which had been drafted with a central bank in view, had provided that at least two-thirds of the net earnings of such a bank should be distributed among the cantons. In order still further to allay anxiety on this score, the bill allowed a very liberal initial compensation to the cantons, and provided for its increase in proportion to population. Finally, by making this compensation in no way contingent upon the net earnings of the central bank, the project offered to the cantons not only an equitable compensation, but an absolutely certain source of income instead of one that was steadily sinking.

The question of location entered as a further obstacle. Whether Berne or Zürich should be selected as the chief site of the bank, a determined opposition would at once arise in the city that was passed over. Berne, supported by Basel and Geneva and by French-speaking and north-west Switzerland, claimed the bank on the ground that the public bank should be in the political capital of the country. Zürich, supported by her neighbors, by north-east and eastern Switzerland, contended that the bank

should be located in the financial centre of the country,— a position claimed by Zürich. The solution of this problem<sup>1</sup> was first found during the parliamentary debates over the measure. The bill as first presented had contained no designation of the site of the bank, deferring this to a special federal act.

Finally, of course, whether the bank partook more of public or more of private character, the advocates and opponents of state enterprise would necessarily be placed in more or less sharp opposition upon the project.

With these considerations in view, the author of the new bill united in the proposed institution the character of a private with that of a state bank. The bank partook of the character of a private bank in the sense that some of the stock was privately owned and in that the individual stockholders were able to exercise a definite influence upon its policy. At the same time the organization was such as to concede to the friends of the state bank idea that the greater part of the capital should be furnished by the public authorities, that the net earnings of the bank should go exclusively to the federation and to the cantons, and that the selection of a majority of the members of the directorate should be placed in the hands of the federal council.

The parliamentary consideration of the measure, the details of which cannot be given here, proved to be comparatively brief. In December, 1904, the Council of States dealt with the matter. In March and June, 1905, the National Council discussed the proposition laid before them by the Council of States. In September and the early days of October the differences between the two chambers were reconciled, and on the 6th of October, 1905, the law was finally adopted. On the 11th of October, 1905, it was promulgated in the *Bundesblatt*. Some members of the

<sup>1</sup> See below, pp. 476-477.

social-democratic party who favored nothing but a strict state bank, with entire exclusion of private capital, led a referendum agitation, but without success; for up to January 9, 1906, when the referendum period expired, the number of signatures was not sufficient to require the popular vote. Consequently, the federal council on the 16th of January, 1906, declared the law to be in force. The nature of that law we shall now describe more in detail. Its main provisions law may be analyzed under three heads: (1) the legal and financial basis of the bank; (2) business scope; (3) administrative organization.

(1) *Legal and Financial Basis.*

By the act of October 6, 1905, is established a juristic personality, to be known as the Swiss National Bank, the administration of which is regulated by the special provision contained in the law itself and in the regulations approved by the federal council.

The capital of the national bank consists of fifty million francs, distributed in 100,000 shares. At the opening of the bank the share capital must all be subscribed, and one-half must be paid in. A minimum dividend is not guaranteed. The maximum dividend is fixed at 4 per cent.

Two-fifths of the share capital is to be assigned to the cantons in proportion to their populations, to be subscribed for within their limits. One-fifth of the share capital is reserved for the banking institutions previously exercising the right of note issue (on the ground of the law of 1881) in proportion to their issues outstanding on December 31, 1904. The last two-fifths of share capital, as well as any shares offered to the cantons and to the banks of issue and not accepted by them, will be offered to public subscription. Only Swiss citizens, or firms domiciled in Switzerland or juristic personalities or corporations which have their



home offices in Switzerland, are to be admitted to subscription.

The bank has a monopoly of note issue. The federation grants to it for the next twenty years the exclusive right to issue bank-notes. The service of the bank in return for the enjoyment of this monopoly consists in fulfilling the duties assigned to it by the law, and in the payment of a license tax yearly to the federation, which is pledged to transfer this contribution undiminished to the cantons. This payment by the bank to the cantons through the agency of the federal government constitutes the recompense to the cantons for their loss of revenue arising from the centralization of the note-issue system. At the outset, it is based both upon the previous note issue and on population, but after fifteen years it will consist entirely of the fixed payment of eighty centimes per head of population in each canton. This license tax is distinctly a payment by the national bank for the monopoly of issue conferred upon it.

The law prescribes the following rules as to the division of the net profits. From the year's earnings, as shown by the profit and loss account, 10 per cent. (but never more than 50,000 fr.) goes to the reserve fund of the bank, until this shall have risen to 30 per cent. of the share capital. After that a dividend of 4 per cent. on the share capital is to be distributed. After the dividend the contribution constituting the license tax is to be paid over to the federation. Of the remainder of the clear profits, two-thirds is to go to the cantons and one-third to the federation.

The license tax is guaranteed by the federation to the cantons to the full amount. In case the annual profits of the bank, after the payment to the reserve fund and the distribution of dividends, are insufficient for the payment of the license tax, the deficit is to be advanced by the federal treasury. The national bank must pay



back to the treasury such advances, with  $3\frac{1}{2}$  per cent. interest, as soon as its profits permit. Such repayment is to take place in the next year before the division of net profits remaining after the payment of the license tax.

The co-operation and control of the federation are secured, as will be presently set forth in detail, through the selection of the bank's officers at the hands of the federal council; through the council's power of approving all regulations, reports, and accounts; through the report which the federal council makes to the assembly; and through the functions of control entrusted to the officials of the finance department.

## (2) *Business Scope.*

The duty of the National Bank is to regulate the currency of the country and to facilitate payments. Its scope is that of a pure bank of issue, deposit, and discount. The operations which the bank is authorized to conduct are enumerated as follows in Article XV. of the law:—

1. Issue of bank-notes according to the provisions of this law.
2. Discount of Swiss commercial paper (*Wechsel*) of not more than three months' duration, and with at least two signers of known solvency. Paper originating in agricultural business, which is based on commercial transactions, may be discounted on the same terms as any other.
3. Purchase and sale of exchange on foreign countries whose currency is on a metallic basis. The maturity of bills of exchange may not exceed three months, and they must have at least two signatures of known solvency.
4. Loans at interest for not more than three months upon collateral in the form of securities and evidences of debt (*Lombard-verkehr*). Stocks may not be accepted as collateral.
5. Deposits of cash without interest; and, at interest, of the cash of the federation and of its departments of administration.
6. Domestic transfer and collection business, and check accounts. [*Giro- und Abrechnung-verkehr, Mandate und Inkassi*].

7. Purchase of interest-bearing bonds, payable to bearer, of the federation, of the cantons; or of foreign states, but only for the purpose of temporary investment.

8. Purchase and sale of the precious metals in bars and coins for domestic and foreign account, as well as loans on such specie.

9. Issue of gold and silver certificates.

10. Acceptance of commercial paper and objects of value for safe deposit and administration.

11. Negotiating, on commission; loans offered for subscription by the federation and the cantons; but participation in the permanent assumption of such loans is excluded.

Furthermore, the National Bank, with all its branches, is obliged to receive payments on account of the federation and its administrative departments and to make payments to the extent of the federal balance, as well as, on the demand of the federation, to undertake the safe-keeping or the administration of property belonging to the federation.

It will be seen that neither from note circulation as such nor from uncovered note circulation is any sort of a tax raised. The National Bank is thus given power to restrict or expand its note issues with no other concern than for the needs of business.

On the other hand, so far as the protection of notes issued is concerned, the provisions of the bank act go far beyond those of the law of 1881. They impose upon the national bank requirements to which neither the banks organized under the last-named act, nor institutions such as the German Reichsbank or the Bank of England are subjected. The security of note issues of every bank is regulated by law. But the Swiss National Bank Act secures not only the notes, but other demand liabilities as well. The specie reserve against bank-notes, in legal money, gold bars, or foreign gold coin, must amount to at least 40 per cent. of the amount in circulation. For the 60 per cent. not covered by specie there must be an equivalent of Swiss discounted paper. Further, the bank must hold against

its short-time liabilities, whether payable on demand or on ten days' notice, an equivalent in cash or in Swiss commercial paper.

Only at its office in Berne is the National Bank pledged to the unconditional and immediate redemption of its notes in specie to any amount. In the dealings of all other branches and of all agencies, redemption must be maintained only so far as may be warranted by the existing balances and the need of specie on the part of the branches or agents; but, in any case, notes must there be redeemed within the time needed for procuring the specie from the central office.

The notes of the bank are not made legal tender. The National Bank itself and the federal treasury are alone pledged for the acceptance of these notes at any time. But the federal council has power in time of war to decree general legal tender quality for the notes.

### (3) *Organization.*

The compromise which was arranged upon during the parliamentary discussion with respect to the question of the chief site of the bank was, in short, this. The bank has not one site, but many. No establishment of the bank is to be managed directly by the national bank directorate. Each has its own independent local board. There exists among the branches no distinction of position or leadership. A group of mutually equal and independent branches, united under common direction and oversight, constitutes the National Bank.

The legal and administrative site of the National Bank is at Berne. At Berne the general meeting of stockholders is held, that of the bank council, and, as a rule, that of the bank committee also. The site of the directorate, on the other hand, is in Zürich.

In addition to the sites at Berne and Zürich the bank is authorized to erect others in the important business centres of Switzerland. Business may begin after the organization of at least four establishments. The bank is authorized to employ agents in places in which no branches are to be opened. A canton in which no branch is erected has the right to demand the creation of an agency in its territory.

The law provides for a general meeting of stockholders, a bank council (*Bankrat*), a bank committee (*Bankausschuss*), local committees, and audit commissions,—these for supervision and control; and a directorate (*Direktorium*) and local directorates for management.

The *general meeting of stockholders* takes place at least once a year. Every share has a vote, with the proviso that a private shareholder may not have more than one hundred votes. The power of the general meeting is very limited. It has to consider the report and the accounts, and, subject to the provisions of the law, to determine the net profits. It has the right (its most important right and its sole means of influencing the conduct of the bank) of electing fifteen members to the bank council. It elects the audit committee, and decides upon the acquisition of existing banks. It has the right (subject to the approval by the federal assembly) to increase the capital of the bank.

The *bank council* is given considerably greater powers than the shareholders' meeting. To it belongs the general supervision of the business and management. The bank council consists of forty members, of whom the shareholders elect fifteen and the federal council elects twenty-five, the term of service being always one year. Among those elected by the federal council are the president and vice-president of the council. Of the remaining twenty-three elected by the federal council, only five may belong to the national assembly and five to the cantonal governments. In their election regard is to be had to the suitable rep-

resentation of the banking, manufacturing, and commercial centres. The members of the bank council must be Swiss citizens resident in Switzerland.

The bank council elects five members of the bank committee. It appoints the local committees and makes nominations to the federal council for the directorate and the local directorates. It examines regulations requiring the approval of the federal council, and reports and accounts prepared by the directorate and the bank committee. On recommendation of the bank committee and of the directorate it fixes the salaries of the officers and employees of the bank, within maximum and minimum limits determined by the by-laws. The proposals of the shareholders' general meeting are considered and decided by the bank council. Lastly, the bank council reaches final decision on all business transactions amounting to more than five million francs and all extensions of credit of more than three million francs.

The *directorate* of the National Bank, a body consisting of three members, is the sole managing authority. It is elected by the federal council, on the nomination of the bank council, for a six-year term; and the federal council names its president and vice-president. The business of the directorate is divided between three departments,—the department of discount and deposit, that of control, and that of note issue. One member of the directorate manages each department. The members who manage the two first-mentioned departments, one of whom must be the president of the directorate, have their headquarters at Zürich. The manager of the note-issue department (to whom belongs the administration of the cash reserve and all transactions with the government) resides in Berne. The directorate exercises all functions which are not by law reserved to the federal council, the shareholders' meeting, the bank council, or the bank committee (see

below). Its most important function is that of fixing the rates of discount and interest. For this the judgment of the bank committee and the views of the directors of the chief branch banks have to be consulted.

The *local directorates* are immediately subordinate to the general directorate. Each local directorate consists of a director and a sub-director, elected for a six-year term. They are responsible for the management of the business in their respective branches.

Subordinate to the directors (as well as to the several local directorates) are all the other officials of the bank. All have the rank of state officials. As regards the mode of appointment, they fall into the four following groups: (1) The members of the directorate, the sub-directors acting under them, the directors and sub-directors of the local directorates, are appointed by the federal council on nomination of the bank council. (2) Officials and subordinates of the directorate and of the branches whose salaries amount to 4,000 francs are appointed by the bank committee, on nomination of the directors. (3) Officials whose salaries do not amount to 4,000 francs are appointed by the directors. (4) Officials of the branches whose salaries do not amount to 4,000 francs are appointed by the local directorate.

The staff of salaried officers (who, it is to be noted, receive no *tantièmes*, as is the case with the Imperial Bank of Germany) is supplemented by the bank committee and the local committees. These bodies give a guarantee of oversight in the interest both of creditors and of customers, facilitate settled relations between the officers and the business world, and prevent purely bureaucratic administration.

The bank council exerts only a periodic control over the bank. Continuous detailed control and supervision is delegated to a standing committee of the bank

council. This *bank committee* consists of the president and vice-president of the bank council (who discharge *ex officio* the functions of president and vice-president of the committee) and five members of the bank council chosen for a four-year term. In addition to the general powers of supervision and control conferred upon this committee, it appoints certain officials, as has just been noted; and further discharges the following special duties. It considers all transactions which are to be conducted by the bank council, and all changes in the rate of discount and interest proposed by the directorate. Transactions and credit extensions exceeding in amount one million francs, so far as they do not require the approval of the bank council, must be approved by the committee.

As the bank committee is related to the directorate of the bank, so are the *local committees* related to the local directorates of the branches, which, according to the importance of the places, consist of three or four members, chosen by the bank council for a term of four years from among the more important merchants and manufacturers of the vicinity. To these local committees belongs, besides the powers of nomination already mentioned, the supervision over the branch, for which purpose they meet as often as there may be occasion.

Over and above the control exercised by the bank council, the bank committee, and the local committees, there exist for the National Bank two further boards of control,—the audit commission (*Revisionskommission*) and board of control of the federal council. The audit commission is a representative of the shareholders' meeting, and is elected by the latter. Its members have the right at any time to make inquiry as to the entire business. The commission must audit the annual accounts and the balance sheet of the bank, and make a written report to the general meeting of the result of this audit;



which is also to be communicated to the federal council. This audit commission, responsible to the general meeting, supplements the board of control, which is named by the federal council, is responsible to it, and is attached to the federal finance department. While the authority of the audit commission extends to the control of the business operations, the board of control of the federation supervises the general management of the bank, the relation of the several parts of its organization one to another, and safeguards the general economic and especially the monetary interests of the country.

Among the provisions of the act which regulate the period of transition, only those will be mentioned here which refer to the liquidation of note issue, authorized by the law of 1881.

By the law of March 8, 1881, every banking institution, provided it conformed to the prescribed conditions, was entitled to claim from the federal council the privilege of note issue. This demand the federal council was obliged to grant. From the date at which the National Bank Act takes effect the federal council is empowered to refuse such demands.

On the opening of the National Bank the banks of issue organized under the law of 1881 are obliged to withdraw their issues within three years. They are bound during this period of three years to deliver for cancellation, to an office of control designated by the federal council, at the end of each quarter at least one-twelfth of their circulation authorized at the time of the opening of the National Bank, or, in default of such delivery, to pay for deficits in this quota to the National Bank. The National Bank on its part is bound to facilitate as far as possible for the banks of issue the liquidation of their notes by affording them loans upon securities.

Until the complete liquidation of these notes the pro-



visions of the law of 1881 with respect to banks of issue remain in force. Their notes also will be accepted in payments during the three-year withdrawal period by the several branches of the National Bank, and the National Bank will arrange for the redemption of these notes within a period of three days without charge. After the expiration of the three-year withdrawal period (and, for the banks which before the expiration of this period have already deposited to the National Bank the equivalent of their outstanding issues, from the date of such deposit) the National Bank undertakes for itself and its successors the duty of redeeming within the next thirty years notes of the banks of issue still circulating. After the expiration of this period the obligation on the National Bank of redeeming such notes expires, and the equivalent of the unredeemed part goes to the federal pension fund.

JULIUS LANDMANN.

BASLE, SWITZERLAND.

## RECENT PUBLICATIONS UPON ECONOMICS.

*Chiefly published or announced since February, 1906.*

*An asterisk prefixed to a title indicates a second and more detailed notice of a book announced in a previous number.*

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|---|--|
| <p>I. General Works. Theory and its History.<br/>             II. The Labor Problem.<br/>             III. Socialism.<br/>             IV. Land and Agrarian Problems.<br/>             V. Population and Migration.<br/>             VI. Transportation.<br/>             VII. Foreign Trade and Colonization.</p> | <p>VIII. Money, Banking and Exchange.<br/>             IX. Finance and Taxation.<br/>             X. Capital and its Organization: Combinations.<br/>             XI. Economic History.<br/>             XII. Description of Industries and Resources.<br/>             XIII. Statistical Theory and Practice.</p> |
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- XIV. Not Classified.

### I. GENERAL WORKS. THEORY AND ITS HISTORY.

- BOSENICK (A.). Der Steinkohlenbergbau Preussens und das Gesetz des abnehmenden Bodenertrags. Tübingen: H. Laupp. 8vo. pp. 121. 3 m.  
 [Published as supplement to the Zeitschr. f. ges. Staatsw., at a reduced rate for subscribers.]
- CARVER (T. N.). Sociology and Social Progress. Boston: Glinn & Co. 1906. 8vo. pp. 810. \$2.75.  
 [Selected readings, edited for use of classes.]
- ELSTER (L., editor.). Wörterbuch der Volkswirtschaft. Zweite völlig umgearbeitete Auflage. Jena: G. Fischer. 1906. Large 8vo. 2 vols. Per part 2.50; the two volumes, bound, 40 m.  
 [The new edition of this well-known dictionary is to be completed by November, 1906.]
- FISHER (I.). The Nature of Capital and Income.  
 [Announced. New York: Macmillan.]
- GALTON (F.). Sociological Papers. London: Macmillan. 1906. 8vo. 10s. 6d.
- LORIA (A.). La morphologie sociale. Conférences tenues à l'Université nouvelle de Bruxelles. Paris: Giard et Brière. 1906. 8vo. 5 fr.
- NATOLI (F.). Il principio del valore e la misura quantitativa del lavoro. Palermo: A. Reber. 1906. 8vo. pp. 411. 8 l.
- NICKFORS (A.). Forza e ricchezza; studi sulla vita fisica ed economica delle classi sociali. Turin: Fratelli Bocca. 1906. 8vo. pp. 285. 3.50 l.
- PARETO (V.). Manuale di economia politica, con una introduzione alla scienza sociale. Milan. 1906. 24mo. pp. 591. 6 l.
- SCHIELE (G. W.). Ueber den natürlichen Ursprung der Kategorien Rente, Zins und Arbeitslohn. Berlin: Hupeden & Merzlyn. 1906. 8vo. pp. 100. 1.20 m.

#### *In Periodicals.*

- DAVENPORT (H. J.). A New Text; Seligman: "Social Value." Journ. Polit. Econ., March. [A summary and review; with an expression of doubt on the usefulness of the notions of "social value" and "social cost."]
- DEFOURNY (N.). Karl Knies. Rev. d'Econ. Pol., Feb., March. [A very general account of his opinions.]
- LE BON (G.). L'économie politique et l'histoire. Rev. Econ. Intern., Jan.
- LEVASSEUR (E.). Aperçu de l'évolution des doctrines économiques et socialistes en France sous la Troisième République. Rev. d'Econ. Pol., Dec., Jan.
- POHLE (L.). Die Entwicklung des

- Verhältnisses zwischen Einkommen und Miete. *Zeitschr. f. Socialw.*, Jan., Feb.
- SCHATZ (A.) et CAILLEME (R.). Le mercantilisme libéral à la fin du XVII<sup>e</sup> siècle. Les idées économiques et politiques de M. de Bealesbat. *Rev. d'Econ. Pol.*, Jan.
- SMITH (Robert H.). The Measure of Industrial Economy. *Econ. Journ.*, March. [An attempt to state in precise terms, with use of simple mathematics, a "commercial economy coefficient," taking account of cost of production, turn-over, working capital, and the like.]
- TÖNNIES (F.). Zur naturwissenschaftlichen Gesellschaftslehre. *Jahrb. f. Gesetzg.*, 1906, Heft 1.
- VALENTI (G.). Teoria delle proporzioni definite. *Giorn. degli Econ.*, Dec.
- WEBER (E.). Roscher und Kries und die logischen Probleme der historischen Nationalökonomie. *II. Jahrb. f. Gesetzg.*, 1906, Heft 1.

## II. THE LABOR PROBLEM.

- BEVILACQUA (G.). Saggio sulla legislazione operaia in Italia. Turin: Fratelli Bocca. 1906. 8vo. pp. 324. 4 l.
- BOSSELLMANN (O.). Die Entlohnungsmethoden in der süd-w.-luxemburgischen Eisenindustrie. Berlin: L. Simion. 1906. 8vo. pp. 283. 8 m.
- [One of a series of investigations on the forms of wages in the German iron trade, instituted by the Centralverein f. arbeit. Klassen, and supervised by G. Schmoller, L. Bernard, and V. Böhmert.]
- CONRAD (Else). Der Verein für Sozialpolitik und seine Wirksamkeit auf dem Gebiete der sozialen Frage. Jena: Fischer. 1906. 8vo. pp. 202. 4 m.
- CORNAGLIA (G.). La vittima delle ripercussioni economiche: conferenza. Milan: Baldini, Castoldi & C. 1905. 16mo. pp. 212. 1 l.
- DEBOLO (M.). L'apprentissage et l'atelier. Paris: Rousseau. 1906. 8vo.
- \*DECHESNE (L.). Syndicats ouvriers belges. Paris: L. Larose & L. Tenin. pp. 113. 2.50 fr.
- [A brief but valuable account, historical and descriptive, of organizations of workingmen in Belgium.]
- DELCOURT (R.). La condition des ouvriers dans les mines du Nord et du Pas-de-Calais. Paris: Glard et Brères. 1906. 8vo. 4 fr.
- DEVINE (E. T.). Efficiency and Relief. New York: Macmillan. 1906. 12mo. pp. 45. 75 cents.
- [Inaugural address as Professor of Social Economy in Columbia University.]
- FROMENT (Y. E. de). L'assistance légale et la lutte contre le paupérisme en Angleterre. Paris: Larose. 1905. 8vo. pp. 184.
- FROMONT (L. G.). La journée de huit heures dans l'industrie chimique et métallurgique. Liège: Vaillant-Carmanne. 1905. 8vo. pp. 106. 2.30 fr.
- GLASSES (M. E.). La condition des ouvriers des mines en Australasie. Etude économique et social. Paris: Dunod et Pinat. 1906. 8vo. pp. 348. 6 fr.
- GONNARD (R.). La femme dans l'industrie. Paris: Colin. 1906. 18mo. 3.50 fr.
- HATCH (E. F. G.). A Reproach to Civilization. London: Waterlow. 1906. 8vo. pp. 110. 1 s.
- [Deals with the problem of unemployment.]
- HEISS (C.) and KOPPEL (A.). Heimarbeit und Hausindustrie in Deutschland. Ihre Lohn- und Arbeitsverhältnisse. Berlin: Puttkammer u. Mühlbrecht. 8vo. pp. 232. 3 m.
- [Issued in connection with an exposition held in Berlin by the Bureau für Sozialpolitik.]
- HOLLANDER (J. H.) and BARNETT (G. E.). Studies in American Trade Unionism. New York:

- Henry Holt & Co. 8vo. pp. 380. \$2.75.  
[Contains eleven essays by members of the Economic Seminary of Johns Hopkins Univ., with introduction by Prof. Hollander. An interesting and valuable contribution.]
- HOLYOAKE (G. J.). *Sixty Years of an Agitator's Life*. London: Unwin. 1906. 8vo. pp. 332. 2s. 6d.
- , *The History of Co-operation*. 2 vols. London: Unwin. 1906. 8vo. pp. 354, 366. 21s.  
[New edition, "revised and completed."]
- HOWELL (G.). *Labour Legislation, Labour Movements, and Labour Leaders*. New York: E. P. Dutton & Co. 2 vols. \$2.50.  
[A second edition, with slight corrections.]
- LALLEMAND (L.). *Histoire de la charité*. Tome III. Le moyen âge. (Du X<sup>e</sup> au XVI<sup>e</sup> siècle.) Paris: Picard. 1906. 8vo. 8 fr.
- PENTY (A. F.). *The Restoration of the Guild System*. London: Sonnenschein. 1906. 16mo. pp. 114. 3s. 6d.
- PIERACCINI (G.). *Patologia del lavoro*. Milan: Società Editrice Libreria. 1906. pp. 605. 10 l.
- QUESTON (L.). *L'augmentation du vendement de la machine humaine*. Publication of the Institut de Sociologie of Brussels. Paris: Giard et Brière. 1905. 12mo. pp. 216.
- RYAN (J. A.). *A Living Wage*. New York: Macmillan. 1906. 12mo. pp. 346.  
[An argument by a Catholic economist, based on moral and economic grounds, for a living wage.]
- SPARGO (John). *The Bitter Cry of the Children*. New York: Macmillan. 1906. 12mo. \$1.50.  
[An interesting but somewhat overcolored study of defective nutrition of children, with introduction by Robert Hunter.]
- VIGNE (C.). *Les accidents du travail dans la marine marchande et la caisse de prévoyance*. Paris: Doin. 1906. 8vo. pp. 100. 3 fr.
- VOSSBERG (W.). *Die deutsche Bau- genossenschafts-Bewegung*. Berlin: A. Unger. 1906. 8vo. pp. 248. 4 m.
- WILBRAND (R.). *Arbeiterinnen- schutz und Heimarbeit. Mit Beitrag von Dora Laudé*. Jena: G. Fischer. 1906. 8vo. pp. 213. 4 m.
- , *Die Weber der Gegenwart. Sozialpolitische Wanderungen durch die Hausweberei und die Webfabrik*. Jena: G. Fischer. 8vo. pp. 214. 4 m.
- UNSIGNED. *Report of the Royal Commission on Trade Disputes*. London: Wyman & Sons. 1906. 9to. pp. 132. 1s. 1d.  
[The Reports (majority and minority) and documents deal chiefly with the liability of Unions, as adjudicated in the Taff Vale case; picketing and conspiracy are also touched. An appendix gives a summary of statutes and decisions.]
- In Periodicals.*
- ALINGTON (C. W.). *Aspects of Unemployment in West Ham*. Econ. Rev., Jan. [Some observed facts mingled with a good deal of speculation.]
- BACHI (R.), COLETTI (F.), MONTEMARTINI (G.). *Del costo degli scioperi per la classe lavoratrice*. Giorn. degli Econ., Jan.
- BÖDIKER (T.). *Vereinfachung der Arbeitsversicherung*. Jahrb. f. Gesetzg., 1906, Heft 1. [An earnest argument for reform in the administration of workmen's insurance in Germany.]
- BRECKINRIDGE (S. P.) and ABBOTT (Edith). *Employment of Women in Industries*. Journ. Polit. Econ., Jan. [An inquiry as to Twelfth Census Statistics, which are found unsatisfactory as to the essential problems.]
- COLETTI (F.) and MONTEMARTINI (G.). *Del costo degli scioperi per la classe lavoratrice*. Giorn. degli Econ., Dec., Feb.
- FRANKENBERG (H. von). *Die Krankenkassen und die Volksversicherung*. Jahrb. f. Gesetzg., 1906, Heft 1.
- FREY (J. P.) and COMMONS (J. R.). *Conciliation in the Stove Industry*.

- Bulletin Bureau of Labor, Jan., 1906. [A valuable investigation.]
- HOWARD (E. D.). The Condition of the German Workingman. Journ. Polit. Econ., Feb. [A chapter from a prize essay, giving miscellaneous information.]
- JANNACONE (P.). Sul costo degli scioperi nei gruppi di lavoratori. Riforma Soc., Jan.
- . Salari e risparmi nel costo degli scioperi nei lavoratori. Riforma Soc., March.
- LAUDA (M. J.). The Economic Aspect of Alien Labor. Econ. Rev., Jan. [Concludes that the influx of alien workers is not damaging to the native skilled workers.]
- LAUGHLIN (J. L.). The Unions versus Higher Wages. Journ. Polit. Econ., March. [Maintains that the union policy has been bad, that they should aim to raise wages by increasing the productivity of labor.]
- LORIA (A.). Ancora intorno al costo degli scioperi. Riforma Soc., Feb.
- MAGRINI (E.). I risultati dell' inchiesta-referendum sulle abitazioni popolari in Torino. Riforma Soc., Feb.
- MUGGAN (O.). Zur Reform der Arbeitsversicherung. I. Zeitschr. f. Socialw., March.
- RÜDLIN. Wohlfahrts-einrichtungen der preussisch-hessischer Eisenbahnen in 1904. Archiv f. Eisenb., 1906, Heft 1. [Describes the arrangements against tuberculosis and alcoholism, pension and insurance organization.]
- SAUCKE (A.). Der durchschnittliche Jahresarbeitsverdienst für land- und forstwirtschaftliche Arbeiter im Jahre 1905. Jahrb. f. Nat. Oek., Feb.

### III. SOCIALISM.

- BERNSTEIN (E.). Die heutige Sozialdemokratie in Theorie und Praxis. Munich: G. Birk. 1906. 8vo. pp. 61. 1 m.  
[A pamphlet published in reply to newspaper attacks.]
- BIÈTRY (P.). Le socialisme et les jaunes. Paris: Plon-Nourrit. 1906. 16mo. 3.50 fr.
- GARCIA-MANSILLA (E.). Tolstoi et le communisme. Avec préface de Jules Claretie. Paris: Charles-Lavanzelle. 1906. 18mo. pp. 254. 3.50 fr.
- \*GUILLAUME (J.). L'Internationale. Documents et souvenirs. Paris: Soc. Nouvelle. 1906. 8vo. pp. 403. 4.50 fr.  
[The author was an active member of the International. This first volume of his memoirs (two further volumes will follow) covers the years 1864-78. The book contains important material on the history of socialism.]
- MONEY (L. G. C.). Riches and Poverty. Second edition. London: Methuen. 1906. 8vo. pp. 338. 5s.  
[A study of the distribution of wealth in Great Britain, with proposals for reducing inequality.]
- The author's ultimate remedy is socialism.]
- REEVE (S. A.). The Cost of Competition. New York: McClure, Phillips & Co. pp. 617. \$2.  
[An interesting study of the wastes of the competitive process, with proposals for socialistic reforms.]
- SOMBART (W.). Sozialismus und soziale Bewegung. 5te neugearbeitete Auflage. 1905. Jena: G. Fischer. 8vo. pp. 335. 2 m.  
[The first edition was published in 1897, and translated into English 1898.]
- SWIFT (M. G.). Marriage and Race Death. New York: Swift Press. 1906. 12mo. pp. 270. \$1.10.  
[Socialistic view of marriage.]
- TRÖBELTSCH (W.) and HIRSCHFELD (P.). Die deutschen sozialdemokratischen Gewerkschaften. Untersuchungen über ihre geogr. Verbreitung 1896-1903. Berlin: C. Heymann. 1905. 8vo. pp. xvi, 298, 147. 12 m.
- In Periodicals.
- GÜNTHER (E.). Die revisionistische Bewegung in der deutschen Sozi-

aldemokratie. II. Jahrb. f. Gesetzg., 1906, Heft 1. [Concludes that, as long as social and political conditions in Germany remain as they are, no refutation of Marxism,

whether by outlanders or by socialists, will have any effect on the character of German social democracy.]

#### IV. LAND AND AGRARIAN PROBLEMS.

CASORRI (V.). L'agro romano e le sue trasformazioni: osservazioni d'un agricoltore. Rome. 1906. 8vo. pp. 151. 2 l.

DECHAUX (E.). La question agraire en Irlande au début du XX<sup>e</sup> siècle. Paris: Rousseau. 1906. 8vo.

DIFFLOTH (P.). Le sol et les labours. Paris: Baillière. 1906. 18mo. pp. 490. 6 fr.

LISSONE (S.). Condizioni sociali ed economiche della gente di campagna. (Biblioteca agraria, no. 14.) Rome, Turin: Roux e Viarengo. 1905. 8vo. pp. 92. 1.50 l.

MOSSO (A.). Vita moderni degli italiani: saggi. Milan: Fratelli Treves. 1906. 16mo. pp. 430. 4 l.

[Contains essays on emigration, the country population, North and South, and the like.]

ROBERTS (W.). Landward Ho! London: Caxton Press. 1906. 8vo. pp. 108. 1s.

[Deals with land and unemployment questions.]

RYBARK (J.). Die Steigerung der Produktivität der deutschen Landwirtschaft im 19 Jahrhundert. Berlin: P. Parey. 1905. 8vo. pp. 59. 1 m.

[Reprinted from Proceedings of the Agricultural Institute of Breslau.]

WORMS (R.). Études d'économie et de législation rurale. Paris: Giard et Brière. 1906. 18mo. 4 fr.

UNDESIGNED. Première réunion internationale d'agronomie coloniale, provoquée par la Société Française de colonisation et d'agriculture coloniale. Paris: Alcan. 1906. 7.50 fr.

#### In Periodicals.

CHIESA (F.). Le condizioni economiche e sociali dei contadini dell'agro di Sassari. Riforma Soc., Jan.

CONRAD (J.). Die Entwicklung des Preisniveaus in den letzten Dezennien und der deutsche und englische Getreidebedarf in den letzten Jahren. Jahrb. f. Nat. Oek., Feb.

HAHN (E.). Die primitive Landwirtschaft. I. and II. Zeitschr. f. Socialw., Feb., March.

KOVÁCS (G.). Die Reform des bäuerlichen Erbrechts in Ungarn. Zeitschr. f. d. ges. Staatsw., 1906, Heft 1.

RÜSCH (H.). Die englische Landwirtschaft. Ann. des Deutsch. Reichs, 1906, 1.

SCHMIDT (B.). Statistisches zur Entwicklung der deutschen Landwirtschaft. Zeitschr. f. d. ges. Staatsw., 1906, Heft 1.

#### V. POPULATION AND MIGRATION.

CANTLIE (J.). Physical Efficiency. London. 1906. 8vo. pp. 216. 3s. 6d.

[A study of the deleterious effects of town life upon the population of Great Britain.]

HALL (P. F.). Immigration and its

Effect upon the United States. New York: Henry Holt & Co. 12mo. pp. 393. \$1.50.

[Author is secretary of an anti-immigration society. His book is a convenient summary of information upon the subject.]

LEWIS (C. J. and J. N.). *Natal-ity and Fecundity: A Contribution to National Demography.* London: Oliver & Boyd. 1905. 8vo. pp. 178. 7s. 6d.

*In Periodicals.*

GHIO (P.). *L'émigration italienne.* Journ. des Écon., March. [Attributes emigration in large part to oppressive taxation.]

## VI. TRANSPORTATION.

BETOCCHI (C.). *Il futuro ordinamento ferroviario ed il Mezzogiorno d'Italia: studi e proposte della commissione speciale dei trasporti.* (Camera di commercio ed arti di Napoli; ufficio di statistica.) Naples. 1905. 8vo. pp. 222.

HOFF (W.) and SCHWABACH (F.). *Nordamerikanische Eisenbahnen. Ihre Verwaltung und Wirtschaftsgebarung.* Berlin: J. Springer. 1906. 8vo. pp. 380. 8 m.

[The authors are members of the Prussian Ministry of Public Works, and give the results of an official tour of investigation in 1904. Much of the descriptive matter is familiar,—on organization, finance, and the like. Two chapters analyze freight and passenger rates, and find that, with proper allowances, Prussian rates are not higher.]

KILLICK (H. S. M.). *Manual of Argentine Railways.* London: E. Wilson. 1906. 12mo. 2s.

PARSONS (F.). *The Heart of the Railroad Problem.* Boston: Little, Brown & Co. 1906. 8vo. pp. 364. \$1.50.

[A study of railroad discriminations, valuable for its collection of materials. Considers government ownership the only remedy.]

PRATT (E. A.). *Railways and their Rates.* London: J. Murray. 1906. 8vo. pp. 372.

QUABCK (M.). *Die deutschen Strassenbahnen und ihre Arbeitsverhältnisse.* Herausg. vom Zentralverband der Handels-Transports- und Verkehrsarbeiter Deutschlands. Berlin: Buchhdlg. Courier. 1906. 8vo. pp. 232. 2 m.

QUARINÉ (E.). *Les télégraphes en Europe.* Paris: Dunod. 1906. 8vo.

*In Periodicals.*

BIEDERMANN (E.). *Die wirtschaftliche Entwicklung der preussischen Staatseisenbahnen.* Archiv f. Eisenb., 1906, Heft 2. [A condensed statement as to mileage, capital account, profits, rates, and receipts. Illustrated by three colored charts.]

BREDT. *Baugeschichte und Bauausführung der grossen sibirischen Eisenbahn.* Archiv f. Eisenb., 1906, 1.

BURROWS (C. W.). *Postal Rates and Literature.* Yale Rev., Feb. [The "Literature" carried at the pound rate is coming to be largely advertising matter.]

COHN (G.). Art. 54 der Reichsverfassung. Zeitschr. f. d. ges. Staatsw., 1906, Heft 1. [For revision of article imposing tolls on watercourses. A rambling article.]

LEYEN (A. v. d.). [Meyer's] Government Regulation of Railway Rates. Archiv f. Eisenb., 1906, Heft 2. [An extended unfavorable review of H. R. Meyer's book, with some detailed correction as to the Prussian situation. A translation of part of this notice is printed in the Amer. Journ. of Sociol. for March.]

LIESSE (A.). *L'exploitation des chemins de fer et la question du rachat.* Journ. des Écon., Feb. [Opposes the repurchase of the Compagnie de l'Ouest.]

MEYER (B. H.). Government Regulation of Railway Rates. Journ. Polit. Econ., Feb. [An elaborate unfavorable review of H. R. Meyer's book.]

MEYER (H. R.). *Railway Rates as Protective Tariffs.* Journ. Polit. Econ., Jan. [Certain decisions of the Interstate Commerce Commission try to maintain the natural



- advantages of localities, and thus check freedom of trade in the United States.]
- ROCHETIER (E.). Paris port de mer. Journ. des Econ., March. [Optimistic project of a deep canal from Paris to the sea.]
- SCHNEIDER (A.). Zur Rentabilitätsberechnung der Personen- und Güterzüge unter Zugrundelegung der Verhältnisse der badischen Staatseisenbahnen. Zeitschr. f. d. ges. Staatsw., 1906, Heft 1.
- STICKNEY (A. B.). Regulation of Railway Rates. Pol. Sci. Quart., March. [Rebates are the result of competition. An investigation of them by a special commission should precede any legislation.]
- TAJANI (F.). L' esercizio ferroviario di stato in Italia. Giorn. degli Econ., Jan.

# VII. FOREIGN TRADE AND COLONIZATION.

- AUGIER (Ch.). La France et les traités de commerce. Étude sur les tarifs de douane. Paris: Chevallier et Rivière. 1906. 8vo. 5 fr.
- BALFOUR (A. J.). Fiscal Reform. London: Longmans. 1906. 8vo. pp. 292. 2s. 6d.  
[Contains speeches delivered from 1880 to 1905.]
- GOTHEIN (G.). Internationale Regelung der Eisenzölle. Berlin: L. Simion. 1906. 8vo. pp. 47. 1 m.  
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